Occidental Medical Times

VOLUME XVII. SAN FRANCISCO, AUGUST, 1903. NUMBER 8.

SOME CLINICAL CHEST CASES WITH FLUOROSCOPIC REPORTS.

THREE CASES OF ANEURISM.
A CASE OF DILATED AORTIC CARCINOMA OF THE ESOPHAGUS SIMILATING ANEURISM.
A CASE OF DIAPHRAGMATIC PLEURISY SIMILATING AN ACUTE ABDOMINAL CONDITION.

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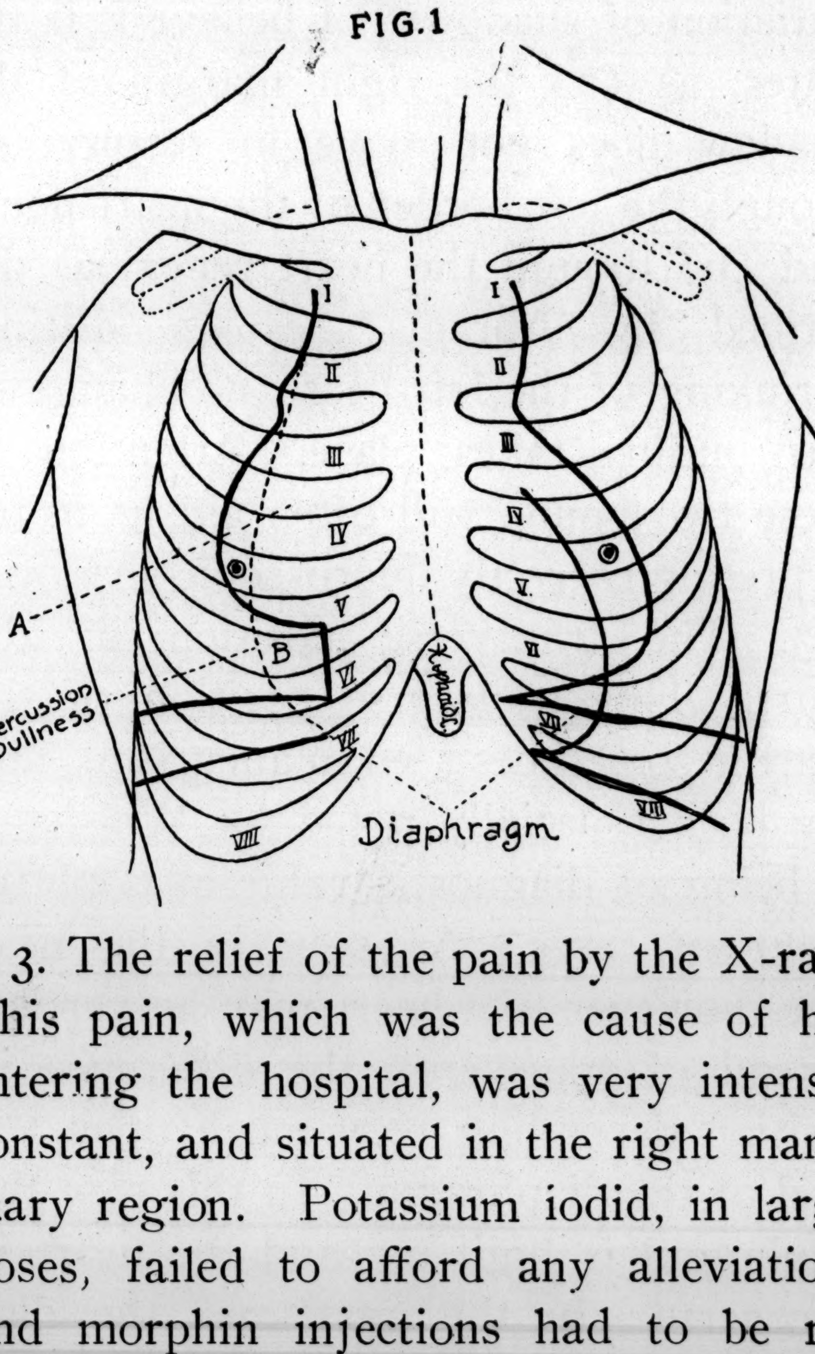
Read before the San Francisco County Medical Society June, 1903.

Case 1. I report the case of F. J. J., as it presents some interesting features. He was a boiler-maker by trade up till five years ago, since when he has done lighter work. He has a marked alcoholic, but no syphilitic, history, and has had lead poisoning and gonorrhea. He was admitted to Professor Kerr's ward in May, 1902, and found to be suffering from a large aneurism of the thoracic arch, the fluoroscopic outline of the heart and aneurism being represented in Fig. 1.

The points of interest are: 1. The age of the man. As you know, it is in the middle decade of life that aneurism is most common. I would ask you to note that this man is nearly 73 years of age, and up till March, 1902, he had no symptom suggestive of the presence of an aneurism.

2. He is an excellent example of the truth of Broadbent's[1] remark that "the aneurism of physical signs springs from the ascending portion of the aorta, the aneurism of symptoms from the transverse arch." Notwithstanding the large size of this growth, of the presence of a well-marked visible and palpable expansile pulsation, of a diastolic shock, of systolic and diastolic murmurs, there was no shortness of breath, no cough, metallic or otherwise, no inequality of the pulses, no relaxation of the vocal cord, no difficulty in swallowing. He had two symptoms, however, often common to aneurism, wherever situated: (a) A sense of throbbing; (b) pain.

FIG. 1



3. The relief of the pain by the X-ray. This pain, which was the cause of his entering the hospital, was very intense, constant, and situated in the right mammary region. Potassium iodid, in large doses, failed to afford any alleviation, and morphin injections had to be resorted to. It is gratifying and instructive to be able to report that three exposures to the X-ray, on alternate days, each exposure lasting five minutes, entirely relieved his pain. The analgesic power of the X-ray in malignant growths and other painful conditions has been noted for some time, and suggested its trial in this case.

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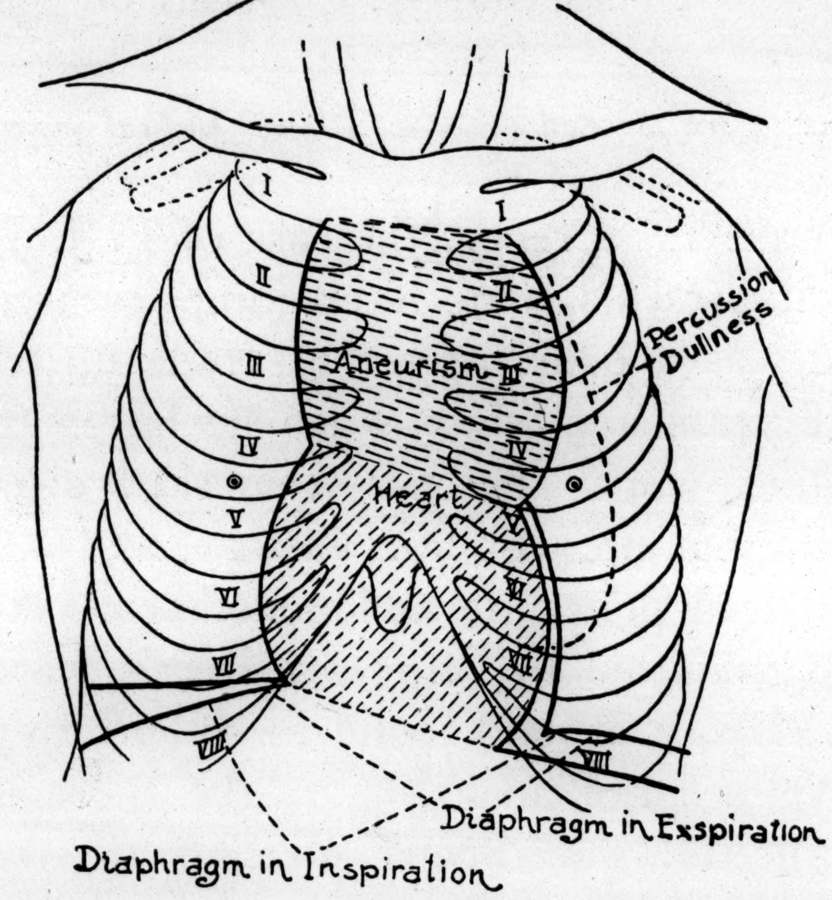
[1] Osler, *Principles and Practice of Medicine*, 2d edition.

4. The assistance given by the fluoroscope in differentiating between cardiac and aortic enlargements. It is impossible by the common modes of examination to determine whether the dull area, A, is cardiac or aortic, since there is no delimitation between the cardiac and aortic dulness, and since the percussion note over the interval B is dull. The fluoroscope, however, showed the right border of the heart above the diaphragm at A for about one and one-fourth inch; above this, either the heart is included in the aneurism, or the aneurism has overlapped the upper part of the right heart border, thus preventing a differentiation of shadows. I believe it is the latter, as (a) the right margin of the shadow does not move in respiration, though the left border of the heart does; and (b) though the heart reflex, as described by Abrams,[2] causes distinct shrinking of the left heart, no change of this outline takes place. Attention to these two points will often aid us in interpreting correctly fluoroscopic shadows.

5. The transverse position of the heart. This transverse position of the heart is sometimes seen in aneurisms, and has been especially noted by Walsham[3] as being of diagnostic value in doubtful aneurism cases. As seen in the next case, however, the heart may be vertical instead of transverse, the difference in position depending very much upon the level of the diaphragm. In this case the diaphragm is high up, and the heart is transverse. In the next case the diaphragm is low down, and the heart is vertical.

6. The blood pressure. The radial pulses are equal in time, the right radial the stronger. The Riva-Rocci sphygmomanometer records, in the right arm, a systolic blood pressure of 198 MM of Hg; in the left arm, 185 MM. Since the usual blood pressure, as measured by this instrument, is from 125 to 145 MM of Hg, you will note the high tension in this case; and this is particularly interesting, as Huchard,[4] in a valuable paper, insists upon the extreme importance, from a prognostic standpoint, of distinguishing between those cases of aneurism with lowered and those with increased arterial tension. In those with increased tension, he says the aneurism is likely to run a very rapid course. The fact that this man for the last five years has led a comparatively easy life, the absence of any acute mitatory symptoms, together with the little change that has occurred during the past year, suggests that this aneurism may have been present for such a length of time as to justify its being regarded as an exception to this ruling.

FIG. 2.
Fluoroscope Tracing



7. The occurrence of an X-ray burn. I have photographed and treated therapeutically this man for the last year at different intervals, and have watched, with the fluoroscope, the monthly progress of the aneurism. At first, I always used a grounded aluminum screen. The

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[2] Abrams, *Med. Rec.*, Jan. 5, 1901.

[3] Walsham, *Lancet*, May 9, 1903.

[4] Huchard, *Gaz. des Hop.*, Feb. 16, 1900.

last time I fluoroscoped him was two days previous to his leaving the hospital for a few weeks. On his way to my office he had become intimately acquainted with Bacchus. Being afraid I might not see him again for some time, I fluoroscoped him while in that condition, the time of his exposure to the ray being certainly, at the widest limit, not five minutes. I used no screen, as previous experiences seem to warrant him free from any personal idiosyncrasy. The same apparatus (coil-Muller tube) had been used on him before in the same way (and for a much longer time, as I had demonstrated him to the students) without any ill effect. Three weeks later, he returned to the hospital, with a typical X-ray burn six inches by seven between the shoulder-blades. The burn was of the first and second degree; the redness, itching, and tender spots were typical. The itching and burning sensations were first felt seventeen days after the exposure. The burn has immensely improved under the application of zinc ointment, and, if it were not for the history of other X-ray burns, I should say it would soon trouble him no more.

Case 2. The second patient whose case I desire to report is 45 years old, a longshoreman, with a definite alcoholic and syphilitic history. Up to five months ago, he felt perfectly well, but then developed a cough upon exertion. This soon became constant, shortness of breath and then difficulty of swallowing solid food supervened, and in three months he lost twenty pounds. I would ask you to note, in view of the history of Case 4, that tracheal or bronchial pressure symptoms appeared before esophageal pressure symptoms, and that the latter related only to solid food. On admission to hospital, one month ago, he presented the main features of an aneurism of symptoms, in contradistinction to the aneurism of physical signs referred to. There were present no visible or palpable expansile pulsation, no murmurs, no diastolic shock. Percussion dulness, however, extended on each side of the sternum, and the second aortic sound was accentuated and booming. In addition to the pressure symptoms previously mentioned, the cough was brassy in character, the left vocal cord relaxed, the left pupil dilated, loud rhonchi could be heard all over both lungs, and the tracheal tug was present. The pulses were equal. The fluoroscopic view (see tracing) of the patient's chest was interesting, inasmuch as it showed a very low position of the heart, a low position of the diaphragm, with limitation of its expiratory excursion. Moreover, the central tendon was much depressed (see tracing), and was an inch and a half below the xiphisternum. The percussion dulness as elicited by another physician is shown in diagram. The sounds of the heart had been listened for, some distance from their real site-areas, and much of the heart dulness was considered to be liver dulness. The low portion of the diaphragm and its diminished expiratory excursion probably indicate, in this case, some tracheal pressure, and the diaphragmatic movement will probably become less and less, until at length there will be no respiratory excursion.[a] (See Case 4.) The low position of the central tendon appears to be due to the weight of a big heart, plus the weight and pressure caused by a large aneurism situated above it, though when there is pressure upon the trachea, and consequently limitation of the inspiratory intake, the entire diaphragm seems to take up a low position, apart from the weight of any mass above it. This is well seen in Case 4, and seems to be an unconscious adaptation of the diaphragm to the impaired aeration. Again, a low position of the entire diaphragm, with a consequent low position of the heart during inspiration, is seen apart from the presence of any demonstrable thoracic disease, and I have noted it particularly in those who have taken gymnastic lung exercises. In these cases, however, during forced expiration the diaphragm, and consequently the heart, returns to the level usually occupied by it during that phase, the expiratory fluoroscopic dimness being present.[5] If an X-ray photograph be taken of such a case while the patient is holding his breath, such a photograph will show this condition.

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[a] This is what occurred in this case; the tracheal pressure gradually increased; the diaphragm gradually became invisible. For some weeks previous to death the patient's only possible position lying down was on his belly.

Case 3. J. J. K., aged 48, a plasterer by trade, with marked alcoholic and a specific history. Admitted to hospital complaining of pain in the right sterno-clavicular joint, which radiated up to the neck, down the right arm, and occasionally to left shoulder and left arm. Examination showed a visible and palpable expansile pulsatile swelling, extending up from the chest into the neck above the right sterno-clavicular joint for about three-fourths of an inch. The man urgently desired operation. The question arose, Was the aortic arch involved? or was it a simple aneurism of the innominate or carotid arteries? It happened that in this particular instance the patient had been an inmate of the same hospital, from time to time, during the previous five years, and the results of previous examinations had demonstrated the existence of an aortic aneurism; but these symptoms and signs had become obscured by the innominate extension now present, and it would have been very difficult for any one seeing this patient for the first time to have satisfactorily determined that question. The fluoroscope, however, showed extensive involvement of the arch of the aorta, as well as the expansile tumor in the line of the innominate artery, thus making it easy to determine what, without its aid, would have been exceedingly difficult. I refer to this case since in that excellent book, "Jacobson's Operative Surgery," last edition 1902,[6] the following paragraph occurs, and no reference is made to the diagnostic value of the fluoroscope in such cases: "A Diagnosis between Innominate and Aortic Aneurism.—It is well known how extremely difficult this matter is. The expression of a confident opinion is too often quite out of the question, while a precise diagnosis is usually impossible. No pains should be spared in going into all those points which may help in deciding how far the aneurism is probably limited to the aorta, and, in the case of this vessel, which part of the arch is chiefly encroached upon, for it is only by paying attention to the above points that answers can be given to the two questions which arise: Is any operation justified at all? If any operation is, what is it to be?"

Case 4. A. C., a native of Germany, aged 58, admitted to Professor Kerr's ward Aug. 11, 1902, complaining of difficulty of breathing. He was a tanner by trade, had been a heavy beer and whisky drinker, and had had syphilis and gonorrhea. His history showed that a year previous to admission he began to experience a difficulty in swallowing, but to this he paid no attention till about three months later he developed a severe cough and much dyspnea on exertion, which prevented him from working at his trade. He had suffered very little pain, but his condition had progressively become worse, the cough, dyspnea, and the difficulty of swallowing all increasing. He was now much reduced in strength, and when admitted to hospital had lost about thirty-five pounds in weight. Examination showed him to be a short, thin, well-framed man, with rounded shoulders and venules all over his face; and, as he carried his chest slightly bent forward, he presented a very suggestive aneurismal attitude. The cough was almost continuous and typically brassy. The left vocal cord was relaxed, the pupils equal. The dyspnea on lying down was so intense that he slept leaning forwards in the sitting posture. The leopard growl rhonchi of Wylie could be heard all over the chest, and absolutely obscured the breathing. The Litten diaphragmatic shadow movement was absent on both sides. The peripheral vessels were greatly thickened and tortuous, the right radial more so than the left. The pulse was 108, the right radial regular, smaller, and of higher tension than the left, which was irregular. There was well-marked episternal pulsation. Percussion dulness was present for an inch to the right of sternum in the second and third interspace, and also in the left supra and infra-clavicular regions. There was an impaired resonance posteriorly between the vertebral column and the vertebral border of the left scapula below the spine, and on deep pressure over this area, pulsation could be determined. The heart apex was one-half inch within the midclavicular line and on the sixth rib, the heart not enlarged; no murmurs were heard anywhere over the chest, but the second aortic sound was ringing and accentuated. The tracheal tug was present, both in inspiration and expiration; no solid food could be taken, and liquids, if drank in any amount, were regurgitated. The urine was normal, the bowels constipated, the liver a little enlarged, the splenic dulness from the ninth to the eleventh ribs. There was no glandular enlargement. The blood examination showed Hb, 75 to 80 per cent; red cells, 4,050,000; leucocytes, 11,000; polynuclears, 70 per cent; large lymphocytes, 8 per cent; small lymphocytes, 19 per cent; eosinophiles, 3 per cent. The Justus test was negative, and the blood-films revealed nothing characteristic. The fluoroscopic examination: fluoroscope anterior, showed the diaphragm low down in the expiratory position, with absolutely no movement, even in deep breathing. There was a pulsating shadow to the right of the sternum. To the left there was some opacity, with no definite border where pulsation could not be made out. The heart was low down. With fluoroscope posterior, a semicircular pulsatile mass, about the size of half an orange, apparently jutting out from the aorta, could be seen between the vertebral column and the vertebral border of the scapula, just below the spinous process.

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[5] Nothnagel, *American Edition Dis. of the Branchi Pleuræ Lungs.*

[6] Jacobson and Seward, *The Operations of Surgery.*

Diagnosis.[b]—His work as a tanner, the alcoholic and syphilitic history, the marked arteriosclerosis, the difference in the pulses, the tracheal tug, the episternal pulsation, the area of dulness and the deep pulsation posteriorly, the evidence of tracheal pressure, both lungs being involved, the ringing second aortic sound and the favorite attitude of the patient, suggesting an attempt to relieve anterior pressure upon the trachea, favored the diagnosis of aneurism. On the other hand, the difficulty of swallowing, its appearance as the initial symptom, its progressive increase, great intensity and constant presence, and to a lesser degree the absence of pain, seemed to warrant a diagnosis of carcinoma of the esophagus, while many of the other symptoms might be due to its extra esophageal spread. The blood examination was of no assistance, as there was not much anemia present. This may have been due to the fact that we were examining a concentrated solution of an anemic man's blood, the ingestion of liquids being small; and in cases associated with diminished liquid absorption due to hindrance to the passage of food between the mouth and the duodenum, I would suggest, from a diagnostic, as well as from a therapeutic, standpoint, the exhibition by the rectum of saline solutions, thus restoring the liquid body balance, hence giving a truer blood picture, and maybe aiding us in determining the nature of the obstruction. The leucocytosis in this case was ascribed to the purulent bronchitis thought to be present. Without a fluoroscopic examination, a diagnosis of carcinoma of the esophagus with extra esophageal spread, occurring in a patient with a dilated arteriosclerotic thoracic aortic arch, would, I feel sure, have been made. The fluoroscopic picture seemed to suggest enlargement of the thoracic arch, plus a sacculated aneurism of the descending portion, as the probable lesion, and such a provisional diagnosis was made. The immobility of the diaphragm, plus the tracheal pressure, apart from the difficulty of swallowing, rendered the immediate progress extremely grave. The post-mortem examination showed purulent bronchitis, plus basal congestion, as the immediate cause of death. There was a carcinomatous stricture of the esophagus, which had spread extra esophageally and surrounded both bronchi, producing stenosis and ulceration. The tumor mass was a little bigger than a hen's egg, and was adherent to the big vessels, and projected to the left. The aortic arch was dilated and very atheromatous; the right innominate artery was also very sclerotic. There were some old, thick pleuritic adhesions at the left apex, and to these, in the vicinity of the left subclavian artery, were due, I believe, the irregularity[c] of the left radial pulse. There were also some adhesions about both lung bases. Such a report[7] teaches us not to allow our clinical judgment to be led astray by giving too much prominence to the fluoroscopic findings in such doubtful cases, but to remember that permanent stenosis of the esophagus indicates almost always the existence of a neoplasm[8] (Hampeln).

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[b] The loss of weight appeared to be due to lack of nourishment, rather than to any malignant cachexia.

Case 5. The next history records one of these cases of acute thoracic disease presenting acute abdominal symptoms. Such cases are related by the older clinicians, but little or no reference is made to them by modern medical and surgical writers; but lately they have been brought into notice by H. S. Barnard,[9] of London, and Maurice Richardson,[10] of Boston. The patient was a discharged soldier, having been in the Philippines, where he had suffered from malaria and dysentery. He was now a teamster, aged 21, and up to two days before admission enjoyed the best of health. His illness began with a frontal headache and a slight chill. The following day he was seized with intense abdominal pain, the maximum intensity being in the right hypochondriac and epigastric region. On the morning of admission and the third day of his illness, the acute pain was still present and was constant. There were no paroxysmal exacerbations, but it was aggravated by the slightest movement. There were no relaxations during any part of the respiratory cycle. He lay absolutely quiet, being afraid to stir. The abdomen was rigid and tender, the main rigidity and tenderness being in the upper part of the right rectus muscle. It was slightly distended and tympanitic, but there was no localized tumor, no vomiting, no diarrhea, no jaundice, no frequency of micturition, nothing abnormal in the urine. The bowels were markedly constipated; the temperature was 100, the pulse 96, regular and somewhat bounding. Though the facies was anxious; there were no rings under the eyes, and the tongue was not brown and dry. The upper border of the uncovered liver dulness was at the sixth rib; the lower border could not be determined, on account of the intense abdominal tenderness and rigidity. The splenic dulness stretched from the ninth to the eleventh ribs. The blood examination showed Hb 85 to 90 per cent; red cells, 5,000,000; leucocytes, 10,400, of which the polynuclears were 85 per cent. The intense abdominal pain; the marked rigidity, fixity, and tenderness; the slight distension; the marked constipation, made up a picture resembling an acute abdominal condition complicated by some peritonitis; but the absence of the abdominal facies; the character of the pulse; the moist tongue; the slight leucocytosis, taken in consideration with his general condition, suggested further search, and on examining the chest, the heart dulness was found to be a little enlarged, the heart sounds normal; the respiration was 30 to the minute, short, and catchy, and there was an occasional short, suppressed cough. The percussion note was normal, but auscultation revealed faint breath sounds at the right base, not increased by respiration, which caused pain, the pain radiating to the right shoulder. The Litten diaphragmatic shadow movement was absent on the right side, and pressure upon the eighth and ninth ribs posteriorly intensified the pain in the gall-bladder region. A diagnosis of right-sided diaphragmatic pleurisy was made, and this was corroborated by the appearance of a friction murmur round the base of the right lung on the following day. The bowels were freely evacuated, nothing abnormal being found in the stools, and the application of hot fomentation and blisters relieved his condition. The pain disappeared, the temperature returned to normal, the leucocytes fell to 8,000, and he asked to be discharged on August 25, a month after admission. I succeeded in getting a fluoroscopic examination, and, much to my surprise, found that, though free from all symptoms, and though the lungs presented no abnormal shadows, the right diaphragm was absolutely fixed in the expiratory position, and neither on deep breathing or coughing moved in the slightest degree. The right lung, therefore, was in the most suitable condition for the invasion of the tubercle bacillus, and such consequent immobility enforces upon one the great necessity for a tubercle-free atmosphere, after such pleuritic attacks. I have been able to follow this case, and the last time I examined the patient the right diaphragm had almost regained its full range of movement.

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[c] I regret that simultaneous pulse and respiratory curves were not taken.

[7] See cases of Gebauer Leoy-Dorn Merchgæsser Classen referred to in *The American Year Book*, 1901–1902.

[8] Hampeln, *Zeit. f. Ulin. Med.*, Bd. XLII H. 2–3.

[9] Barnard, *Lancet*, Aug. 2, 1902.

[10] M. Richardson, *Boston Medical and Sur. J.*, April 17, 1902.

The recognition of such cases as this is somewhat puzzling, as the apparent picture is that of an acute abdominal disease. The imitation, as suggested by Barnard's reasoning on the work of

Head and McKenzie, probably depends upon the fact that the diaphragm and pleura are supplied by the lower six dorsal nerves, which nerves also supply the muscles and skin of the abdominal wall, and, moreover, from the same spinal segments which give them origin come the fibers which, by the way of the rami communicantes and splanchnics, go to the lungs and abdominal viscera. If the seventh, eighth, and ninth nerves or their branches are chiefly involved, then the imitation picture is one of acute liver, gall-bladder, or stomach trouble. If the tenth, the maximum pain is referred to the umbilical region, and consequently almost any acute abdominal disease may be simulated. If the tenth and eleventh, the condition resembles acute appendicitis. In many cases, especially in those that end in suppuration, it is probable, as suggested by Barnard, that the inflammatory process actually sets up a neuritis in branches of the neighboring intercostal nerves. The diagnosis is important, as an operation demanding a general anesthetic may be the responsible death factor in acute thoracic cases. It depends upon a full examination being made of every case, however apparently obvious the condition, and I would refer to the Litten diaphragmatic shadow test, and especially to the fluoroscope, as being of much diagnostic value in such cases, the latter showing in thoracic cases a unilateral deficiency of movement and abnormality of position; in abdominal cases, bilateral changes less marked in degree, unless the diaphragm itself be involved. If, after a full examination, there is still a question as to the diagnosis, and one of the probabilities demands operation, it is well to remember the maxim, "When in doubt, operate," as fewer lives are lost by clean exploratory surgery than by injudicious medical delay.

THE TREATMENT OF THORACIC ANEURISM BY THE INTRODUCTION OF WIRE AND GALVANISM WITH THE REPORT OF A CASE.

By Raymond Russ, B. Sc., M. D.

It was in 1864 that Charles H. Moore, of London, practiced the introduction of a permanent filiform material into the sac of a thoracic aneurism for the radical cure of that affection. Fine iron wire was inserted through a cannula, with the result that clot formation occurred, as shown by an almost complete cessation of pulsation. The patient, however, died five days later of sepsis, then so little understood. Domville records the next failure by this method seven years later. The late Dr. Morse, of this city, published, in the "Pacific Medical and Surgical Journal," 1887, the first successful result by Moore's method. The patient, who gave a history of traumatism, but no syphilitic or alcoholic history, presented an abdominal aneurism. Five and one-half feet of one millimeter, silver-plated copper wire was introduced. The patient made a rapid recovery, and worked as a stevedore until his death, four years later. Corradi[1] made a signal advance in the method when he suggested that clot formation could be aided by passing a positive electric current over the introduced wire. Burresi was the first operator to take advantage of Corradi's suggestion, passing 42 cm. of a No. 30 annealed wire into a large aneurism of the ascending portion of the arch of the aorta. The current from the anode pole of a battery of sixteen cells was passed over this wire for twenty-five minutes. The patient showed some improvement following the operation, but died at the end of three and one-half months. Dr. William Watt Kerr, of this city, reported in the "Occidental

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[1] Corradi, *Lo Sperimentale*, April, 1879.

Medical Times" for January, 1889, two cases in which he had followed the combined method. One of these cases was especially successful. Ten feet of drawn silver wire was introduced into a pulsating tumor to right of sternum. The patient left the hospital at the end of two months, remarking that "he felt as well as ever he did. He worked as a street-paver for ten months, and then was lost sight of. Dr. D. D. Stewart,[2] of Philadelphia, deserves great credit for improving the technique and calling attention to the possibilities of the operation. He has published three cases of thoracic aneurism. Dr. Guy L. Hunner[3] has written a most excellent and exhaustive article on this subject, giving a resume of all reported cases and a detailed account of Finney's cases.

My own case is as follows: An Irish laborer of 50 years, has been accustomed to hard work all his life, a heavy drinker and smoker, but has been in robust health up to present illness. His family history is good. The patient denies syphilis. Dysphagia is a prominent symptom. The voice is husky, and there is a dry, hacking cough, with frequent expectoration of mucus and blood. The face is puffed and cyanosed. Orthopnea is marked, the patient assuming the characteristic aneurismal attitude. On inspection a large, pulsating tumor is seen above left clavicle, its right border extending as far as the episternal notch, at which point it is most prominent. This tumor measures laterally 14 cm. and antero-posteriorly 4 cm. The pulsations are transmitted along right side of neck. The trachea and esophagus are evidently displaced to the right. The pupils are equal. The left side of chest above nipple is somewhat more prominent than the right. Large varicosities in the veins of the right inguinal region are noticed, also along outer borders of the recti muscles as high as the ensiform cartilage. The heart is displaced downwards and to the left. There is dulness in front over upper right lung. Auscultation reveals no murmurs. The typical aneurismal bruit is present over the tumor and over the cardiac region. The pulse is regular and of good tension. The radial arteries are slightly atheromatous. The volume is greater on the left side. Pulsation can be seen over the tumor, and on palpation there is a strong expansile and heaving impulse. The walls of the tumor are quite thin. Tracheal tugging is obtained. As the severity of the symptoms has steadily increased, and as rupture of the sac seems possible, operation is determined upon. An antitoxin needle, protected by a coating of shellac, is used, and after local anesthesia has been obtained by ethyl chlorid the needle is plunged through the most prominent portion of the tumor in the episternal notch. The wall is quite thin, and the jet of arterial blood, which spurts with each heartbeat, indicates that the needle has entered directly into the aneurismal sac. The bleeding is very readily controlled by the finger and by the No. 26 soft silver wire, which is then introduced and which well fills the lumen of the needle. Great difficulty is found in passing the wire as it constantly kinks in the needle's shank; about one foot of wire is finally inserted and attached to the positive pole of the battery, the indifferent electrode being placed on the patient's back. The current, beginning with fifty milliamperes, is gradually raised to one hundred milliamperes, the seance lasting fifty-five minutes. The patient stands the operation remarkably well, complaining only of a constant sense of discomfort and slight burning whenever the current strength is increased. The negative plate gives him considerable annoyance. The pulse has increased slightly during the operation. On withdrawal of the needle there is no flow of blood. The wire is cut short and the end tucked under the skin. There is no immediate change in the tumor, but on the next day it has become quite hard and the pulsation is markedly less. Encouraged by the good local result the operation is repeated fifteen days later, a small trocar and cannula now being introduced above and to the left of the first puncture. Six feet of No. 22 silver wire is then inserted with ease and with but slight loss of blood. A current of fifty milliamperes is then passed for ten minutes, and is then increased to sixty milliamperes and maintained for thirty minutes. The patient experiences no untoward effects. After the operation it is found that the tumor is much harder and firmer, and it so continues until his death. A deep transmitted impulse can, however, be felt. Five weeks later the patient died with symptoms of tracheal pressure. The patient had felt better for several days after each operation, but the distressing symptoms soon returned. At autopsy was found an enormous aneurism, springing from the transverse arch and involving its branches. A large part of the right lung was eroded. The wire in each operation had been introduced into the aneurismal sac. The clotting about the wire was firm.

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[2] Stewart, *American Journal Medical Sciences*, Vol. CIV, p. 422, *American Journal Medical Sciences*, 1896, p. 171, *Philadelphia Medical Journal*, Nov. 12, 1898.

[3] Hunner, *Johns Hopkins Hospital Bulletin*, Nov., 1900.

I have collected from the literature twenty thoracic cases operated on by this method, a resume of which is given in the accompanying table. The method has also been applied to seven cases of abdominal aneurism operated on by Stewart (2), Halstead, Finney (2), Noble, and Reeve, but a consideration of this subject is not within the limits of this article. It may, however, be remarked that Noble's case, an aneurism the size of a fœtal head, midway between the ensiform cartilage and umbilicus, died eight months later of acute dysentery, no return of the aneurism having occurred.

The data now at our command is sufficient to show the value of the operation. Two cases of traumatic thoracic aneurism are recorded, but these are rare. Brown, of St. Bartholomew's Hospital, has found only eight cases of traumatic origin out of a total of two hundred and twenty-eight cases of aneurism. The chances of success in aneurism of traumatic origin are far better than in those in which there is extensive degeneration of the arterial coats, this degeneration being but slightly more advanced at the seat of aneurism than elsewhere. Sacculated aneurisms alone are amenable to this treatment, unless the operation be performed for the sole purpose of strengthening a portion of the sac where rupture is imminent. The sac should contain but one compartment, and, if a good result is to be obtained, it should not have advanced too far toward rupture. The sac must again be in such a position that it can readily be reached from the surface, and must not be in such a relation to the aorta that clot formation will interfere with the direct arterial stream. There should be indications of growth toward the surface rather than toward the center of the chest. In the ascending portion of the aorta the growth must be anteriorly or laterally for it to be amenable to treatment. The success of this mehtod will depend much upon the accuracy of the diagnosis, a matter of great difficulty in aneurisms of the thoracic aorta.

The operation as now performed involves but little or no risk. Sepsis is an ever-present danger, but our modern methods are effectual guards against it. Hunner argues that there is great danger of the development and rupture of a secondary sac as the result of shunting of the blood stream from the rapid filling of the primary sac by blood clot. This seems hardly possible as the shutting off of an aneurismal sac could not so materially decrease the total arterial caliber as to appreciably raise the blood pressure. Ruptures of secondary sacs have been recorded in several cases, but I can not believe that they have occurred as the result of the operation.

Silver, platinum, and gold wire seem to give equally good results. The best sizes are from No. 22 to No. 26 inclusive. Stevenson[4] early recommended the employment of soft iron wire, arguing that the coagulation is aided by the oxides and chlorides of iron which are formed, but Stewart[5] has shown by experiment that the amount of debris given off would probably be the source of considerable danger. He found also that silver salts under the influence of the current were not formed in appreciable quantity, and yet the wire was sufficiently corroded to favor the deposit of fibrin. After some experiments in filling 200 cc. to 500 cc. glass flasks with wire, Hunner comes to the conclusion that wire with a lively spring is to be preferred, and recommends a silver alloy drawn from a No. 8 to a No. 27 gauge. Freeman[6] after simulating the roughened walls of an aneurismal sac by using a large turnip hollowed out and passing wire into this "aneurism," comes to the opposite conclusion, and recommends a soft unalloyed wire. As to the amount of wire to be used, Kerr's early statement that six to ten feet is sufficient to introduce into any aortic aneurism remains true at the present day. The enormous amounts of wire used in the cases of Roosevelt and Abbe probably hastened death.

In my own case I found that a small cannula with trocar gave much better service than a needle. The loss of blood in passing the wire is very slight and kinking does not take place. After the needle or cannula has been coated with shellac it can not be subjected to boiling or to soaking in antiseptic solutions. Sterilization, however, can be effected by means of dry heat. The cannula should not be inserted too far into the sac, so that the wire shall not curl up against the opposite wall, but shall have full play in coiling. Great care should be taken that the positive electrode is connected with the introduced wire. The positive current produces firm clots while the action of the negative current tends to produce primarily friable masses and to soften clots already formed. A firm thrombus should be formed about the introduced wire as quickly as possible. This is best done by maintaining a current rapidly raised to fifty or sixty milliamperes for three quarters to one hour. Danger of injuring the aorta by a current of this strength is hardly to be thought of.

In the twenty-one cases collected, including my own, the operation has been successful in five, or twenty-three per cent. All the cases which have withstood the immediate effects of the operation have been followed by amelioration of symptoms. While the results are not brilliant, it must still be remembered that many of the cases were in a most unfavorable condition, the operation being attempted as a last resort. With im-

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[4] Stevenson, *Lancet*, July 11, 1887.

[5] Stewart, *American Journal Medical Sciences*, Vol. CIV, p. 422.

[6] Freeman, *American Journal Medical Sciences*, vol. CXXII, p. 743.

CASES OF THORACIC ANEURISM OPERATED ON BY THE MOORE-CORRADI METHOD.

No.	Operator.	Where Recorded.	Kind of Aneurism.	Wire.	Current.	Result
1	Burresi.	Ls Sperimentale, April, 1879.	Large aneurism ascending portion aorta.	42 cm. No. 30 annealed.	16 cells tested to yield 1 c c hydrogen gas per minute; 25 minutes.	Did well at first, but subsequently symptoms returned, and died 3¼ mos. later.
2	Barwell.	British Medical Journal, 1886, Vol. 2, P. 675.	Very large progressive aneurism of ascending and transverse arch.	10 feet of finest steel wire.	9 to 10 ma. for 1 hour 10 min.	Died a week later, the aneurism rupturing in a newly formed sac.
3	Roosevelt.	Medical News, April 9, 1887.	"Aggravated aortic aneurism, threatening death.	225 feet fine steel piano wire.	About 25 ma. for ½ hour.	Death on 23d day.
4	Abbé.	Medical News, April 9, 1887.	Rapidly advancing aneurism at root of neck.	100 ft. No. 1 catgut introduced & 9 days later 150 ft. fine steel wire.	50 ma. ½ hr., then connected with negative pole 100 ma.	Death on 2d day from rupture of sac into trachea.
5	Kerr.	Occidental Medical Times, Jan., 1889.	Fusiform aneurism extending from base of heart to origin left subclavian.	6 feet drawn silver wire.	Current strength not given. Passed 50 minutes.	Death on 18th day.
6	Kerr.	Occidental Medical Times, January, 1889.	Pulsating tumor to right of sternum.	10 feet drawn silver wire.	Current strength not given. Passed ½ hour.	Patient at hard labor for 10 months after discharge, then lost track of.
7	Rosenstirn.	American Journ. Med. Sciences, January, 1891.	Aneurism of ascending part aortic arch.	26 in. of moderately thick, soft silver wire.	70 ma. for 30 minutes.	Still alive and in good health.
8	Stewart.	American Journ. Med. Sciences, 1896, P. 171.	Innominate aneurism.	10 feet No. 30 gold wire.	Gradually raised to 80 ma., which was maintained 1 hour.	Died 3½ years later of cerebral thrombosis, the result of endarteritis present.
9	Hershey.	Therapeutic Gazette, Vol. XX, P. 590	Sacculated innominate aneurism	2½ feet No. 28 gold wire.	Upward of 70 ma. for 65 minutes.	Lived 1 year, doing active work; recurrence of symptoms and death from rupture of sac.
10	Stewart.	Philadelphia Med. Journal, Nov. 12, 1898.	Very large aneurism of transverse and descending portion of arch.	14 feet fine gold wire.	80 ma. for 1 hour 20 min.	Greatly relieved, life prolonged. Died 8½ months after operation.
1	Hare.	Therapeutic Gazette, May, 1898.	Aneurism of terminal portion transverse and beginning of descend'g aorta.	9 feet fine gold wire.	70 ma. for 1 hour.	Much relieved by operation. Died 7 months later from pressure symptoms on trachea.
12	Corson.	Philadelphia Med. Journal, March 4, 1899.	Large aneurism of arch.	6 ft. silver wire.	8 cells of a dry cell battery used for 2 hours.	Died 2d day.
13	Stewart.	Johns Hopkins Hosp. Bulletin, Nov., 1900.	Large thoracic.	Wired 3 times.	. . . .	Life threatened from dyspnœa; rallied from each operation; death from rupture 9 months later.
14	Hare.	Therapeutic Gazette, Jan., 1900.	Thoracic aneurism.	10 ft. gold wire Same amt. again passed 1 month later.	Current for 1 hr 20 min., gradually increased to 100 ma. Current for 1 hour	Condition much improved. Died 7 months later from rupture of sac.
15	Finney.	Johns Hopkins Hosp. Bulletin, Nov., 1900.	Thoracic aneurism.	10 ft. silver wire alloyed with copper.	10 ma. for 1 hr., 20 ma. for 15 minutes.	Returned to work, but died 6 months later, probably of aneurism.
16	Finney.	Johns Hopkins Hosp. Bulletin, Nov., 1900.	Thoracic aneurism.	Wired 3 times, 10 to 11 feet silver wire, alloyed with copper, used in each case.	10 ma. for 1 hour.	Decided, but temporay, improvement after each operation. Died 11 weeks later.
17	Freeman.	Am. Jour. Med. Sciences, Volume CXII, P. 743.	Pulsating tumor, base of neck.	5 or 6 feet No. 27 wire.	75 ma. for ½ hr.	Improvement. Death 10 months later.
18	Freeman.	Am. Jour. Med. Sciences Volume CXII, P. 743.	Bulging tumor end right interspace.	22 feet No. 27 silver wire. Rewired 3 additional times.	70 ma. for 65 min.	Alive 10 months after operation, and in good health.
19	Willard.	Annals of Surgery, July, 1901.	Traumatic aneurism of descending thoracic.	20 feet wire.	4½ to 80 ma. for 1 hour.	Left hospital 9 weeks after operation.
20	Hare.	Therapeutic Gazette, Jan, 1903.	Traumatic aneurism.	9 feet gold wire. Rewired 6 months later.	Current from 5 to 55 ma. for 1 hour.	Died a short time after 2d operation, from hemorrhage from external wound.

proved methods in diagnosis much can be expected from the method.

751 Sutter Street.

INDICATIONS AND COUNTER-INDICATIONS FOR PROSTATECTOMY.

By Louis Bazet, M. D.

Read before the Medical Society of the State of California, April, 1903.

Not long ago, the medical profession thought that in perineal prostatectomy a radical method had been found for the cure of hypertrophy of the prostate; many operations were performed the world over, each operator recorded his cases, and medical newspapers were full of this literature. Now it seems that, after the enthusiasm of the first moment, more reflection is exercised; we do not hear of so many prostatectomies performed. Discrimination has been made. Experience has sanctioned to be operated only the cases that give assurances of a probable good result. To facilitate the selection of these operable cases, the writer of this paper submits to you what he considers the indications and counter-indications for prostatectomy.

In the pathogeny of the accidents of protatism many factors come into play. In stating that the prostate occupies the most important role, I must admit that there are individuals who have for many years a very large prostate without being troubled. Notwithstanding this contradictory fact, the prostate is often the first pathological factor; under the influence of its hypertrophy, the bladder is disturbed in its function, the urine does not flow through the urethra with the same freedom, and then begins the vesical evolution of perturbation, which is first acute, then intermittent, then chronic retention. Vesical contractility will become weaker from day to day, and at the end of a time varying generally from eight to ten years, the patient will arrive at the period of complete and definite retention. At that time the life of catheterism and its attendant miseries begins, and ultimately conduces to the death of the patient. During all this time the necessity of catheterism exposes the patient to accidents of infectious and toxic character.

Prostatism is made of all these combined, associated, and blended elements, and when the responsibility of treatment has to be assumed for a prostatic patient, it is necessary to make a complete examination and to establish a precise diagnosis. The observations must be related in detail, the group of symptoms disassociated, the succession of accidents established, and each organ carefully analyzed. Without these precautions, there is risk of performing an unjustifiable and useless operation, or, at all events, of not obtaining the hoped-for result.

To make a complete diagnosis of a prostatic, it is necessary to analyze the individual, the apparatus, and the organ. Concerning the individual, that is, the heart, the lungs, the arteries, etc., there is here nothing special to be said; as to the apparatus, the kidneys, above all, are to be examined. The polyuria, the turbid urines, the great deposits, the small symptoms of Brightism,—all these signs should be searched; they have a great prognostic value. But their research does not offer any special particularity. With the prostatic, it is the examination of the organ that most interests us, and by the organ I mean the prostate and the bladder.

It is to that examination that we must bring great precision, because upon it depends the operation to be performed.

For the examination of the prostate many means of unequal value can be utilized. First, the rectal touch; it must be made with an empty bladder, otherwise the prostates spread by the vesical extension, all appear increased in size. The rectal finger shows the volume of the prostate, its length, its width, its firmness, its consistency. Notwithstanding that, these informations are very vague; there are some prostates with rectal evolution that are not large. They are felt by the rectal touch. There are others with vesical evolution that are large and are not felt by the rectal touch. Besides, the rectal touch does not give sufficient information on the volume of the prostate. It is only an indication. But if we combine the abdominal palpation with the rectal touch, it will be easy to have the conception of an interposed volume, more or less great, depending upon the size of the prostate. Each lobe is to be palpated successively and its relative volume appreciated. However, this is possible only with lean individuals; it is not the case with corpulent prostatics, whom we frequently see; upon them we must employ other methods. It is then that catheterism intervenes to give us information of the highest precision. The olivary explorator and the bi-coudee sound give us positive data on the volume of the prostate. They make us know of the existence of a greater or less prominence on the posterior wall; they show sometimes by the stop they undergo at this level that there is a cul-de-sac of depression with a bar above, but, over all, they show, by the depth to which they penetrate, what is the length of the prostate, and the length of the prostate is in direct ratio to its volume. The more it increases, the more it lengthens; its superior face is pushed toward the abdomen by the hypertrophy, and the length of the prostatic urethra, which in the normal state is 27 millimeters, reaches a length of 4, 5, 6, and even 7 centimeters; consequently, to draw the urine off, the sound must penetrate that depth, and an experienced eye can judge of the volume of the prostate by the depth to which the sound has to penetrate. The metallic explorator confirms these data in two ways: by the depth it attains, it shows the length of the prostatic urethra, and besides, by lowering the handle, the elevation of the neck of the bladder is ascertained. The prostate will be the more voluminous, the more the neck of the bladder is elevated. It is a general law from which the prostate can not escape. Placed at the inferior part of the pelvic cavity, the prostate can not enlarge downwards on account of the ischio-pubic rami. Upwards, on the contrary, and there only, it is free. Hence when the hypertrophy takes place, the prostate rises more or less toward the umbilicus and carries with it the vesical neck, consequently the vesical neck will be pushed upward so much the more as the prostrate is voluminous. But when the neck of the bladder rises, the bas-fond becomes depressed and the depression of the bas-fond becomes greater in proportion to the degree of hypertrophy. Now then, this depth of the bas-fond will be shown to us by the metallic explorator. The metallic explorator is introduced: If with it you can execute a complete circle of the neck, it is because the prostate pouch exists. In addition to this, by exploring to the right and to the left of the neck, you appreciate to what extent the right and left lobes of the prostate project into the bladder; owing to a median obstacle, you can discover the existence of a senile or pedunculated lobe. And thus a series of precious notes are furnished only by the intervention of an instrument commonly used for searching for vesical calculi.

Finally, we have another means to control the intravesical projection of the prostate; it is cystoscopy. The cystoscope confirms the data established by the means I have already mentioned. Depth of the bas-fond, median or lateral projections, these conditions are shown by the cystoscope; we had them already; we confirm them by the reflected light.

These are the means, as a whole, that permit us to define the exact state of the hypertrophied prostate. Before making a decision, it is necessary to know and appreciate the condition of the vesical muscle. The study of the urinary residium gives us the nature of its contractility. When the bladder empties itself completely, it is because its contractility is intact; when it empties itself partially, it is because it is already in a state of inefficiency; but when it does not empty itself at all, when the retention is complete, this does not mean that the contractility is lost; on the contrary, even in these cases, it is rare that the vesical contractility is entirely abolished. It appears that even in complete and chronic retention, the vesical muscle, aided by the catheter, has more vitality than in the chronic and incomplete retentions, where the patient, neglectful of the catheter, aids less willingly the contractility of the vesical muscle. When the bladder is filled with water, and the catheter remains in place, we can judge of the vesical contractility by the intensity of the stream of the liquid column. A manometer is not necessary; this simple exploration is sufficient. When all the facts are known, it is possible, I think, to weigh with certainty the indications and counter-indications for the treatment.

The indications for prostatectomy are based upon conditions that vary according as the patient labors under the first, second, or third period of prostatism.

In the first period, when only dysuria and nocturnal frequency exist, prostatectomy ought to be postponed. At that time, the operation would be somewhat extreme, and I do not see any trouble that may arise by waiting until the period of more serious complications. I see, on the contrary, the advantages of this prudent expectation. But when we find acute retention, which is the first indication of the failure of the vesical muscle, then the question of the operation presents itself again, and this time, the operation appears to me to be perfectly indicated if the prostate is large. With a large prostate, congestive attacks will fatally return; the retention that has begun will be more pronounced, and if it be true that all methods for relief have, in this condition, given extraordinary success perineal prostatectomy can not be inferior to any. That operation reaches the obstacle, which is the prostate; it alone suppresses that compression made by the lateral lobes upon the lumen of the urethra; consequently the bladder, freed from this initial primary obstacle, has no more reason to be subsequently disturbed and its muscular function further weakened. At all events, results will some day show that the patients a long time under observation and operated at this initial period, have been definitely cured. But if I reason thus for a large prostate, I will be more circumspect for a gland of small volume; here, notwithstanding the acute accidents, if the prostate is small, we can wait, and I believe it is better to wait under a prudent and vigilant supervision, the manifestations of more serious difficulties.

Second. When the patient has arrived, after a phasis more or less prolonged of miseries, at the period of chronic and complete retention, prostatectomy will be then almost always indicated. It is then that it will give, I am quite sure, its best results. Although the vesical contractility appears lessened and even abolished, and although the patient is unable to emit a few drops of urine, the prostatectomy, by removing the obstacle which is shown more and more by pre-existing disturbances, will permit these patients to urinate spontaneously and sometimes even to empty their bladder. Hence the obstacle is everything. It is not necessary for it to be a very large one. If prostatectomy is indispensable at this period for a large prostate, it is equally needed for a small prostate if it is proved that the vesical sclerosis has not been the first factor to intervene. The diagnosis of these cases is moreover very difficult to make, and I believe that the doubt ought to be on the side of the operation. I may say willingly that at this stage the operation meets only counter-indications which further on I will mention.

Third. At last the patient reaches the period of incomplete and chronic retention. He has a residue of 100 to 200 grams; he uses the catheter two or three times every 24 hours. Can we operate under these conditions? Yes, if the prostate is large; the operation is justifiable because there is chance of improvement, but we must be wisely conservative, because it is these bladders, sclerosed by cystitis, badly aided by the catheter, that furnish the majority of failures in prostatectomy. Before the operation the residue was 100 grams; it remains the same after. Before the operation the catheter was used three times a day; after, it is necessary to use it the same number of times. The patient has lost his prostate and his condition has not improved. On these patients I consider the indication of an operation only when there is a large prostate. I attach a great importance to the volume, because with the volume we have the best chance to obtain a good result.

Another indication for prostatectomy in these patients is shown by the presence of calculi, which, notwithstanding previous lithotrites, continue to recur with the same disheartening frequency. With these patients the prostate is the indirect cause of the relapse. That organ, by elevating the neck of the bladder, forces the depression of the basfond and induces calculi to lodge there; that organ, by forcing the retention invites the agglutination of the infected residue, and the formation of calculous concretions. Hence, instead of crushing through the urethra, a calculus where the conditions of production are not modified, I think it more surgical to reach the bladder by the new perineal operation, to remove the prostate and afterwards the foreign body, thus at the same time disposing of the calculus and the condition determining its formation.

But prostatectomy has also its counter-indications, and it is not a paradox to say that, in determining the treatment of a prostatic, counter-indications more than indications have to be borne in mind. The indications for the operation, very slight in itself, on aged, fatigued persons, with all their organs and apparatus in a state of downfall, may find in the state of the individual, elements of the highest gravity. Age constitutes first a counter-indication. Beyond 72 years, chances of success of the operation diminish considerably. And as the perspective of a prolonged life can not be foreseen at that age, I do not see in what proportion the patient can be benefited by an operation. Infection is another factor that pleads against the operation. Here, however, we have to understand each other. The infection is constant with the prostatic, but it can be vesical and remain chronic. But, when it is accompanied by acute congestion and fever, when, at the same time, there exist chronic lesions of sclerosis and renal infection, the operation presents dangers that ought to defer to another epoch its realization, and often postpone it indefinitely.

ACUTE SUPPURATIVE OSTEOMYELITIS.

By Emma Sutro Merritt, A. M., M. D., Surgeon to the Hospital for Children, San Francisco.

Read before the Saturday Night Club, June, 1903.

I wish to show you this evening a number of cases of acute inflammation of bone, a disease which, if I can rely upon my personal experience, has been unusually prevalent in California during the last few years. It attacks nearly all the important bones of the body, as is demonstrated by the patients whom I shall present to you to-night. The first case of which I shall speak is not here as it has passed from my care, but as it is an example of this disease occurring in the short bones I will relate its history.

Case 1. *Disease of Os Calcis, Astragalus, and Cuboid.*—G. B., male, aged nine years, entered hospital Jan. 26, 1903. Two and one-half months before, pain began in his right heel. By the third day the leg was swollen up to the knee. The slightest jar or touching of the foot caused the child to cry out with pain. He had a high fever, and was delirious. About the eighth or tenth day, pus discharged from the inner side of the heel. After this, the patient felt better. At the time of entry, his temperature rose as high as 103° Fahr., but soon fell, upon application of moist, antiseptic dressings.

Examination showed the foot and heel very much swollen, with a sinus on the inner side of the tendo Achillis, leading down to necrosed bone. On the outer side a red and fluctuating mass was seen in front of the malleolus. An incision was made, enlarging the sinus, and nearly all the os calcis was taken away. As the child did not stand the anesthetic well, all the dead bone was not removed at this time. The foot did pretty well for about a month, when it again became badly swollen. On March 9 the child was again anesthetized, when the remainder of the os calcis, all the astragalus except the surface articulating with the bones of the leg, and the cuboid were found diseased, and removed. Previous to the onset of the disease, the boy wore a pair of shoes which rubbed against his heel and chafed the skin. After the second operation, the foot remained badly swollen, but we still hoped to have reproduction of the bone from the periosteum and possibly anchylosis of the foot to the leg. It was suggested, however, to the father that the foot would probably have to be amputated. He thereupon became dissatisfied, and removed the child to the French Hospital, where the foot was at once removed.

Case 2. *Disease of the Tibia and Radius.*—A. J., female, age twelve and one-half years. Entered hospital Feb. 1, 1902. I happened to know her when she was quite young, and learned at the time that, on account of the poverty of her parents and the isolated part of the country in which they lived, she had insufficient and improper nourishment as a child. The cause of the illness for which she entered my service was as follows: She was suffering from a boil on the heel. Notwithstanding this, she indulged in active outdoor sports. On Dec. 16, 1901, she was coasting down hill, when her foot caught in a woodpile, and a couple of boys, who were on sleds behind her, ran over her leg. However, she walked on her foot the rest of the day, but complained of its hurting her that night. Next morning it was slightly swollen, but she went to school. She was brought home by the teacher before noon. For nine days the child cried with pain, and could neither eat nor sleep. No swelling of consequence for three days, when the leg became the size of a stovepipe up to the knee. On Jan. 20, 1902, more than a month afterwards, a physician was called in, who incised the leg in three places, and put in drainage-tubes. On the 25th he removed a piece of bone. Child had a number of boils during preceding summer, and when her foot was injured, there was a boil on the heel. When she entered the hospital, her blood count was as follows: Hemoglobin, 50 per cent; white blood-cells, 14,000; red blood-cells, not noted; staphylococcus and streptococcus present in the wound. An amputation was advised, but this was so strenuously objected to by her parents that a so-called conservative operation was at last consented to. The tibia was thoroughly curetted, the entire lower end being completely removed; but, notwithstanding this, the wound continued to suppurate to excess, and it was evident that the child could not improve under the circumstances. Amputation was performed on Feb. 20, at the junction of the lower and middle thirds of the thigh. The long anterior flap was edematous at the time of the operation, and the odor from the wound strong. Thorough drainage, however, was used, and in due course the stump healed, although the drainage had to be kept up for weeks. Before the stump had thoroughly healed, a deep abscess developed at the side of the thigh. This was freely opened up on March 20, and after a time closed. At the same time a swelling was noticed on the inner side of the right wrist, just above the styloid process of the radius. Soon fluctuation was felt in it, and on March 29 it was freely opened and packed. The lesion proved to be deep seated, and before long roughened bone was found. On September 29, the cavity was curetted, and the lower end of the radius found to be completely involved. After the operation only a thin shell of bone remained to represent its lower extremity. The wound then seemed to do fairly well for a time. The soft tissues healed slowly, and began to contract, so that the dressings became painful. A small quantity of pus exuded from the deep, narrow sinus. On Jan. 28, 1903, the child was put under ether for the fourth time, and the end of the radius was again curetted. This time the cavity was much shallower than before, and we soon came upon newly-formed bone. After this operation, the arm gradually healed, and the child was finally discharged on April 10, 1903, cured, after a sojourn of fourteen months in the hospital. The movements of her wrist remain perfectly free, and, except for the deep scar at the side of the wrist, no deformity exists. An artificial leg was secured for the child, and it was soon surprising to see with what agility she moved about.

Case 3. *Disease of the Tibia.*—L. S., male, nine years old, entered the hospital Oct. 16, 1902.

He had suffered the previous year from many boils on his arm. On July 18, 1902, his brother said that he had fallen when at school, but it is not certain whether he did or not. There was no bruise on the leg, but his knee pained him, and he walked lame. He felt sick, and had a high fever. On the second day the fever continued, and the boy could not sleep. On the third day his knee was swollen. He was very sick with fever for eight days. On the eleventh day his foot and leg were swollen; a doctor was seen, who cut to the bone and got pus. The boy was better for two weeks. Then the leg swelled again, and a second incision was made in it, a month before he entered the hospital. At the time of entry, his left leg was swollen, and two sinuses leading down to the anterior surface of the tibia were seen. On the 23d of October, two incisions, each three inches long, were made by Dr. Willits, one over each sinus, and the bone was thoroughly curetted. On November 21, a piece of dead bone showed in the upper opening. On January 31, I removed a superficial sequestrum with a pair of ordinary dressing-forceps, but felt more dead bone under this piece. February 4, condition of blood: Hemoglobin, 65 per cent; white blood-cells, 10,000; red blood-cells, 3,580,000. February 5, the child was anesthetized. Several pieces of dead bone were removed, and the two sinuses connected by chiseling out the intervening bone. The length of the opening in the bone was about six inches. On account of carelessness in not applying an Esmarch bandage during the operation, the patient lost a considerable amount of blood, and nearly collapsed on the table. After his removal to the ward, the patient suffered from shock, but revived under appropriate treatment. On February 23, hemoglobin, 52 per cent; white blood-cells, 7,400; red blood-cells, 3,050,000, showing the anemia still present due to loss of blood. Soon after the operation, the wound was in a very healthy condition, and I was anxious to fill it with decalcified bone chips. None, however, were at hand, and considerable delay was experienced before a supply properly prepared could be procured. In April, the granulations took on a warty appearance, and became yellow in color. Some of them were removed and examined, but pronounced to be made up entirely of connective tissue. The peculiar yellow appearance of the granulations, however, still continues. May 25, hemoglobin, 75 per cent; white blood-cells, 12,900; red blood-cells, 4,670,000, showing recovery from the previous anemia.

Case 4. *Disease of the Tibia.*—O. S., male, aged eight, entered hospital Jan. 3, 1903. About six weeks or two months before, the patient was playing tag, when he fell and struck his leg on a box. Soon after a lump on his leg was noticed, which was not ecchymotic. At the time of his entrance, a fluctuating tumor was found at the junction of the middle and upper third of the anterior aspect of the tibia. There was no redness over the tumor; slight pain on pressure. An incision was made over the swelling. A small amount of pus was found. The bone was slightly roughened. It was curetted, but proved to be only diseased superficially. The boy left the hospital, cured, on February 27. This case is interesting, because it is the only one in the series which shows nothing but superficial involvement of the bone. It was a case of osteo-periostitis, and not one of osteomyelitis. In nearly all the cases which have come under my care, the interior of the bone has been affected, and the term "osteomyelitis" correctly describes the disease. The affection generally begins in the lining membrane of the medullary canal, and extends from the initial point up the interior of the bone, spreading through the Haversian canals and substance of the bone to the periosteum, which is involved secondarily. The condition of the blood in this case was as follows: Hemoglobin, 70 per cent; white blood-cells, 8,000; red blood-cells, 3,960,000, showing the mildness of the attack. The culture of pus from the wound was sterile.

Case 5. *Disease of the Tibia.*—L. R., female, baby of nineteen months, entered the hospital March 18, 1903. Her birth was normal, although the child is said to have had a cold in the head, but there is nothing else in the history to lead to a suspicion of syphilis. On the Thursday before Thanksgiving, when the child was about fifteen months old, the mother first noticed a swelling on the right leg. The child cried when touched. There was no redness at first. Ointments were applied, and finally the swelling was opened, at the Lane Hospital, on January 13, about two months after the beginning of the disease. The child remained in this hospital about one week, after which she was treated at the Cooper Clinic. Another operation was proposed at this time, and in consequence the child was brought to the Hospital for Children on March 18. The right leg was swollen and red, and had a sinus in the middle third, which was discharging. There was also a swelling in front of the external malleolus. On March 20, I made an incision down to the bone, and found the tibia so softened that it had to be scraped away through almost its entire thickness at the point where the sinus was situated. The internal malleolus was also almost entirely taken away, and the bone curetted as high as its upper third. After the operation, the child seemed to improve for a time. This continued for about five weeks, when the leg again began to swell; the child became peevish and looked badly. The temperature was but little above normal, 37.4.° In May, the condition became so bad that the bone was again curetted. This time practically the whole diaphysis of the bone was removed, and a portion of the upper epiphysis. The child again got along nicely for a time. On the 16th day of May, I tried to bring the edges of the wound together by strapping them with sterilized oxid of zinc plaster, hoping in this way to shorten the length of time for healing. The wound was thoroughly drained with rubber tubes. On the 21st it was noticed that the wound did not look well; there were odor and pus and greenish-looking sloughs present. The next day, as the wound looked worse, the straps were taken away, the wound widely opened, and the leg put up in a wet dressing. Swelling of the knee and thigh was soon noticed. The temperature rose to 39.3. Cultures were made of the fluid in the knee, and found sterile. At present the swelling of the knee and thigh has diminished. The leg is still very much swollen. I think that amputation would be the proper course to pursue in this case. Both epiphyses being diseased and having been partly removed, the bone will not grow properly. The tibia will be much weakened, as the whole diaphysis can hardly be reformed from the periosteum. The fibula being healthy, will outstrip the tibia in growth, and make the leg crooked. Then, the baby being so young, there will be a greater and greater disparity in the length of the two legs as times goes on. The child has already undergone untold suffering, and has much more to suffer before the wound will be healed. Her general health has already been severely tried. She will of course always be lame. The arguments against amputation are that the bone may reform. We can not tell how much it will grow. We do not know how great the shortening will be. The deformity caused by the more rapid growth of the fibula can be remedied by a subsequent operation to shorten it or to prevent its further growth. Amputation can be performed, if necessary, later on.

Case 6. *Disease of Femur.*—H. K., male, age thirteen, entered hospital in November, 1898. While at school in the beginning of 1898, he was pushed down, and struck on his knee. He was, however, able to walk home. Next day he complained of severe pain and had fever. The case was diagnosed as rheumatism. He remained in bed nine months, and during this time had an attack of jaundice. When he got up, he could not stand. The tendons were contracted; his leg was crooked and shorter than the other. He was then sent to Dr. Sherman, who diagnosed an old fracture of the lower end of the femur, healed at an angle. He advised refracture. Accordingly the child entered my service at the hospital. It was then eleven months after the injury. The child was suffering from psoriasis, patches of which were on his leg. This made me hesitate about performing the operation, but it was finally decided upon. We did not know at the time, but discovered later on, that the child was also suffering from a perforation of the septum of the nose. Dr. Sherman had just procured a new and powerful osteoclast, which he had not yet had an opportunity to try. It was decided to use this instrument on the case, and he asked to be present at the operation. When the time came, he assisted in the manipulations. At our first attempt, the instrument slipped, and a second and third attempt was made before the bone was finally broken. There was, in consequence, much injury to the soft parts. The boy did fairly well for a few days after this, but his temperature rose, and his leg was much swollen. Finally I decided that pus must be present, and opened the leg, when a great quantity of it escaped. The wound was henceforth treated as an open one. The fracture healed, but pus continued to discharge from the wound, and dead bone was felt. Albumin appeared in the urine. The general condition of the patient became worse and worse. Finally, on Dec. 14, 1899, the leg was amputated at the junction of the middle and upper thirds. After this, the general condition improved and the flap healed. In January, the angle of the wound began to break down. On March 20, 1900, there was still a discharge from the wound. The sinuses were then opened up, and a large cavity was found on the inner side of the leg. The bone was curetted. The condition then improved somewhat, but albumin was present in the urine in quantity. On May 17, necrosed bone was again discovered in the wound. On May 24, the remains of the femur were removed by disarticulation, as the necrosis was found to extend to the head of the bone. On June 16, the wound was in good condition, and the boy up and on crutches. On June 25, the albumin in the urine increased so much that the boy was again ordered to bed. The albumin then diminished, and on July 5 he was again up. On July 16, he went home, but came to the clinics regularly for dressings. He continued to do this till March, 1901, when he was finally discharged, the wound soundly healed. The osteomyelitis must be attributed in this case, I think, to infection from the patches of psoriasis in conjunction with the severe bruising of the soft parts in a badly nourished child.

Case 7. *Disease of Femur.*—G. H., male, aged six years, entered the hospital on March 4, 1902. He was a delicate looking little fellow. The child was brought down to the Southern Pacific Hospital, in this city, from Nevada. The disease from which he was suffering was thought there to be tuberculosis of the knee, and he was removed to the Children's Hospital, and placed in Dr. Sherman's service. On hearing the history of the case, Dr. Sherman concluded that the case was not tuberculosis. The boy was accordingly transferred to my wards. I was summoned to the case about 8 P. M. I found the boy with a fever, his right thigh swollen to more than double the size of the left one, and the leg completely flexed on the thigh. I was told that he had been ill for ten days only, but had had much pain and fever. Previous to this attack he had been quite well, except that he had suffered from boils at the back of his neck. I found fluctuation at the lower and internal part of the thigh, and at once opened in this situation. A quantity of pus escaped from the wound. In order to get good drainage, a counter-opening was made on the outer side of the thigh. The leg was straightened as far as possible and the limb enclosed in a plaster cast. After the opening was made in the thigh, the whole posterior surface of the femur opposite the popliteal space was found to be denuded of its periosteum, but the bone itself, though roughened, was solid. For a few days after this operation, the child seemed to improve, when suddenly his face began to swell, and it was soon evident that he was suffering from parotitis. We were extremely puzzled at this phenomenon, until it transpired that an epidemic of parotitis had been raging in Wadsworth, the town from which he came. After several months, dead bone was felt in the wound, and, although the sequestrum was apparently solid, on Nov. 12, 1902, he was etherized. The sequestrum was found to have separated, and was removed. The cavity was thoroughly curetted. The boy improved greatly after this, and his parents were anxious to take him home at Christmas. But he did not pick up as I thought he should, and there was more suppuration in the wound than normal. On Dec. 22, 1902, I again felt a small point of dead bone in the wound, and was about to operate, when the boy, on January 7, was found to be covered by a rash, which soon extended all over his body. This rash was not attended by fever; there was no albumin in the urine. A slight sore throat was complained of for one day immediately preceding the appearance of the rash. The throat was slightly red. Streptococci were found in the throat. The rash was very peculiar. It was fine and red, but consisted of minute vesicles filled with serum. Dr. Lewitt saw the case on several occasions, but pronounced it atypical. No fever all this time. Finally the boy began to desquamate, and immense flakes, three or four inches long and one or one and a half inches wide, peeled off his body. The size of the scales and the quantity of them were very great. Neither Dr. Lewitt nor I had seen a similar case. All this time the boy, outside the disease of his leg, seemed perfectly well and happy. But the wound was suppurating freely, and the dead bone could be felt more and more distinctly. The boy was kept in quarantine six weeks. On March 12, the dead bone was again removed; but the quantity of it was surprising. When the lower end of the femur was cleaned, there was only the outer shell of both condyles left. The shaft of the femur was much involved, and was so much reduced in thickness that during the course of the operation a cracking sound was heard, and it was found that the shaft had separated from the lower epiphysis of the femur. The leg was thoroughly packed, and put in a wire splint. The child lost a great quantity of blood from the continuous seepage after the operation. In a few days we fixed the leg by means of an interrupted plaster bandage, the upper and lower parts being held together by strong iron bands incorporated into the dressing. The boy's hemoglobin before the operation was 40 per cent. It now fell to 28 per cent. The white cells were 6,050; the red only 1,300,000. The boy was given frequent normal salt enemata. There were casts granular and hyalin in the urine, but no albumin. The ammoniated iron was considered the most appropriate form to give. He was put on a milk diet, and great attention was paid to getting him to take as great a quantity as possible. He had but little appetite. The wound suppurated freely. The boy's condition seemed desperate; but, under the above precautions, his hemoglobin gradually rose to 60 per cent; the white cells were 11,500; and the red rose to 4,890,000. The child seemed much better, but again a great quantity of dead bone could be felt in the wound. We informed his parents that another operation was necessary, and that, in all probability, his leg would have to be amputated. It was now seven weeks since the last operation. Accordingly, I had his splint taken off, and was much pleased to find that union had occurred and that the leg was again solid. I had not expected this result, as nothing remained of the lower end of the femur but a shell, and the upper part of the fractured bone was very thin, as a great part of its thickness had sloughed away. I determined, under the circumstances, to examine the wound itself carefully after the child was anesthetized before finally deciding to remove it. The child was prepared for operation on May 21. As soon as he was under the ether, I put my fingers in the wound, when I found all the sequestra, three in number, loose in the wound and easily extracted by the fingers, without instruments. The whole cavity of the bone was then found to be covered by granulations, except in one point, where the bone, though bare, was solid and healthy.

The boy has been up since May 29.

Case 8. *Disease of Ulna.*—C. M., female, age eleven, entered hospital April 24, 1903. While running about six weeks before, fell on a cement sidewalk and hurt her arm. At time of entering, the right forearm was swollen and boggy. The outer side of the elbow was red and fluctuating. An incision was made at this point, and a considerable quantity of pus evacuated. The bone along the outer surface of the ulna was then felt to be denuded and roughened for several inches. A counter-opening was made about the middle of the forearm, and a drainage-tube inserted. A wet dressing was applied for some time, till the swelling had disappeared. The elbow, which had been quite stiff, then became freer in its movements. A dry dressing was now applied, the drainage-tube being kept in. On Thursday last, June 17, a piece of dead bone, quite loose, was noticed in the upper opening, and it can still be seen there. This case is chiefly interesting as illustrating the proper method of treatment. As you can readily see, it would be very easy to extract the loosened sequestrum with an ordinary pair of thumb forceps. This, however, I do not propose to do. On the contrary, I shall incise the soft parts down to the bone, in order to see the full extent and attachments of the sequestrum. I shall then endeavor to loosen it as a whole from the tissues in which it is embedded. If there are additional sequestra present, I shall be able to see them, and will remove them in the same way. When all the loose pieces of bone have been taken away, the part of the ulna from which they have been removed will be thoroughly curetted until all the diseased parts have been removed. The wound will then be carbolized and packed. After four or five days, the packing will be removed, and, if the parts are in an aseptic condition, decalcified bone chips will be put in, to try to hasten the healing process. If pus be present when the packing is removed, the wound will be treated as an ordinary open wound.

June 22. An incision was made the whole length of the ulna. The sequestrum, which beforehand had seemed superficial and easy to remove, now proved to be about six inches long, the middle portion of it including the entire circumference of the ulna. It was perfectly loose and easily removed through the long incision; but the ulna was found to be involved in its entire length. The olecranon process was hollowed out by the disease, which extended down the shaft to its lower extremity. On the fifth day, decalcified bone chips were inserted and the incision closed. The wound healed nicely, except at the upper part, where the stitches gave way and the chips fell out. As the articular surfaces are not involved, the child will have a useful arm.

Case 9. *Disease of the Humerus.*—L. McC., female, age thirteen, entered hospital Feb. 10, 1903. Had scarlatina at six years. Has also had varicella. History of present illness: She had suffered for some time with intestinal trouble, when her arm first began to hurt her on June 10, 1902. The same evening, her arm was swollen down to elbow, and by the morning of the 11th, the next day, down the forearm to the knuckles of the hand. The swelling of the limb continued till June 20th, when it broke, and considerable pus escaped. Later the arm was lanced several times. In November several pieces of bone were discharged from the various sinuses. On Jan. 4, 1903, the arm was operated upon at the Sonoma County Hospital, but, as the child took the anesthetic badly, the operation was not completed. She left this hospital on January 19, and on February 10 entered the Hospital for Children. Her arm at this time was found to be much swollen. The elbow was stiff and swollen. The movements of the shoulder limited, and with marked atrophy of the deltoid. Pus was discharging from five different sinuses in the arm. Through some of these, dead and loosened bone could be felt. Condition of blood: Hemoglobin, 82 per cent; white blood-cells, 14,500; red blood-cells, 4,050,000. She was prepared for operation, but on the day set her temperature had fallen to 34.2,° so the operation was postponed. On February 19 she was etherized. An incision was made along the outer side of the arm. It was then found that the sinuses led down to the medullary canal, and a groove was chiseled in the humerus for nearly its whole length, a bridge of bone being left near its central portion. Nearly the whole outer surface of the bone was found in a healthy condition, except for the perforations of the various sinuses leading down to the central canal. The interior of the bone, however, was filled with a series of sequestra lying loose in its cavity. These were removed entire, and the cavity thoroughly curetted. The diseased portion was completely removed. The only places where the lesion had extended along the outer surface of the bone was at the bicipital groove. Here the bone had to be curetted under the long tendon of the biceps, and at the upper end of the groove quite a cavity had been eaten into the head of the bone. The case, however, was one of an almost pure myelitis, with formation of sequestra in the medullary canal, and with little or no inflammation of the surface of the bone. The wound was thoroughly drained by rubber tubing. The arm has been steadily improving ever since the operation. Notwithstanding a streptococcus sore throat, from which she suffered for a couple of weeks, the defect in the bone is closing nicely. She has recovered considerable use of both elbow and shoulder, and will have a useful arm.

Case 10. This femur, which I wish you to examine, is from the case of H. D., male, aged nine years and three months, who entered the hospital in February, 1901. A year and a half previously, the child had been taken ill; had had a high fever and pain in the right clavicle and in the right leg. After a week or more, swelling appeared over the sternal end of the clavicle and on the inner side of the leg just above the knee. These swellings became red, then purple. Both these places were opened and dressed for some time. They finally healed. After a few months, both places broke down again, and began discharging pus. The father dressed the wounds from this time till the child entered the hospital. A few weeks before doing so, a second sinus had appeared at the outer side of the leg, from which pieces of bone had been discharged. On February 14, the sinus over the clavicle was opened up, and a large sequestrum, about four centimeters long, removed. The clavicle was then scraped, as was also the second rib, which was also found to be involved. Both sinuses in the femur were enlarged. The bone was found to be in a very bad condition, much necrosis being present. A large incision was made in the soft parts on the outer side of the leg, extending from two inches below the trochanter to within four inches of the knee. Through this incision, as well as through the enlarged sinuses, the femur was thoroughly curetted. Much dead bone was removed from the medullary canal and also from around the site of both sinuses. The boy improved greatly after this operation, and by May the wound in the clavicle had healed, but the condition of the thigh remained about the same. In June, after consultation with Dr. Gallwey, it was decided to remove the leg. As the whole shaft of the bone was involved, I found it necessary to remove the femur by disarticulation. There was considerable discharge of a mucopurulent character following the amputation. After the first ten days, the stump healed rapidly, until nothing remained but a simple sinus. The boy was discharged from the hospital, but ordered to come to the dispensary regularly for dressings. The mother wanted to take the child to Los Angeles at this time, but was forbidden to do so until the wound was entirely healed. She, however, took the matter into her own hand, and, without telling us, took the boy south. On Oct. 9, 1901, about three months afterwards, the child returned to the hospital with three deep sinuses discharging from the stump. On November 12, the sinuses were curetted, and the larger one incised for about an inch and a half. The child improved after this, till the sinuses again began to close at the outer end, causing retention of the discharges. On November 27, the sinuses were again curetted, and found to be more extensive than before. Free incisions were now made, and the whole stump found to be honey-combed with many sinuses. Pockets of degenerated tissue were found and hardened masses of cicatricial tissue. These were all removed, and the flap split open down to the ilium. The operation was quite extensive, lasting an hour and a half. The child, after this operation, vomited for five days. His pulse was 140 to 160, and temperature as high as 39.° He was very restless, and had a mild delirium. On the fifth day, his stomach was washed out. From this time on he began to improve. He gradually took nourishment, his pulse fell, and the nervous symptoms abated. The wound healed nicely and solidly by granulation from the bottom. This wound was about two-thirds healed when the child was again removed from the hospital, against our advice and without our consent. The wound, however, at this time was so superficial that it probably healed without further trouble. I think the condition of the stump, after the mother took the child away, was caused by the pus not having a free exit, and so burrowing deep and infecting many of the silk ligatures on the ends of the vessels, as there is a history of several of them being discharged through the sinuses. At the time of his second admission to the hospital, the wound in the clavicle had again broken down, but, after being curetted once more, healed completely. The femur from this case which I should like to have you examine shows the extensive involvement of the medullary canal, a large sequestrum lying loose in its cavity, the numerous sinuses through which the pus escaped to the exterior, and the extensive formation of new bone. The periosteum and the outer surface of the bone are, as you see, except for the cloaca, in a perfectly healthy condition, the interior of the bone being alone involved. The most instructive part, to my mind, is the abscess in the trochanter major, not seen as well now as it was in the fresh specimen, and which is a separate focus from the disease in the rest of the bone. It shows how difficult of diagnosis such an abscess of bone, if occurring alone, would be, and also how uncertain the entire eradication of the disease from any bone may be; for while we can completely get out the diseased portions of bone from the part where the disease is manifest, we can not be sure that there are not other abscesses at a distance, which may increase in size and start the disease afresh, when everything is apparently in good condition. Osteomyelitis is a disease full of surprises, breaking out again and again, when you believe it almost healed, and, on the contrary, improving in a most unexpected manner, when you are about to despair of success.

The suddenness with which osteomyelitis appears, the gravity of its symptoms the rapidity of its ravages, the long illness which follows its occurrence and the lasting deformity which is apt to be its consequence, renders it one of the most serious and important of the diseases of childhood. The maiming for life which so often follows it, renders its early diagnosis and treatment of the utmost importance, and yet it is often not recognized, or else treated superficially. In several of the cases which I have presented to you this evening, weeks and even months were allowed to elapse before any radical treatment was undertaken. Sometimes a physician was only called in long after the beginning of the disease, and then saw the case but a few times. As soon as osteomyelitis is diagnosed it should be treated thoroughly and at once. I am quite convinced by my personal experience that early operation is extremely important, for delay only means rapid extension of the disease and greater destruction of bone. As soon as the disease is recognized, free incisions should be made down to the bone. If pus is found, thorough drainage should be made. If the symptoms then abate, this is all that is necessary at this stage of the disease. If, however, the severity of the symptoms do not abate, the child should again be anesthetized and the bone itself opened down to the medullary canal and all softened material scraped away. Free exit for the pus should be made at the earliest possible moment. For if this is not done, the infection will spread rapidly and destroy a greater surface of bone, besides which it will greatly endanger the life of the patient.

No matter what is done, a greater or less amount of bone is sure to die. After the abscess is once opened, there is nothing to do but to keep the wound clean, sustain the strength of the patient, and wait for the dead bone to separate. After a period of six months has elapsed sequestrotomy should be performed even if the dead bone does not seem to have loosened. The dead bone is often so firmly fixed by granulation tissue and new bone that it is impossible to tell whether it has separated or not.

In fact, often judging by the apparent fixity of the sequestrum, one would be led to keep on waiting for its separation indefinitely. It is a safe rule to adopt to wait patiently for six months for the dead bone to become loose, and if it has not done so after this length of time to anesthetize your patient, and then to cut down upon the bone until you are able to see the exact condition of affairs. If the sequestrum seems to be at the surface of the bone, no attempt to remove it by force should be made, but the edges of the surrounding healthy bone should be carefully chipped away until it can be extracted as a whole. If this is not done, small portions and splinters will remain in the wound and keep up an endless irritation. If, as so often happens, the sequestrum is central and can only be felt or seen through the cloacae leading to it, it will be necessary to chisel away the intervening portion of healthy bone until a groove is formed through which you can extract the dead bone entire. In this way a gutter may have to be made nearly the whole length of a long bone with only bridges of bone across it here and there. An operation to be successful must clean away all unhealthy tissue. After the operation is over, the wound should be packed tightly to prevent bleeding. The packing should be removed in four or five days and drainage tubes inserted. This is the time if no suppuration is present to try bone grafting with decalcified bone chips. In the majority of cases, however, suppuration will be present and implantation of new bone will not be successful. The healing process, if the wound suppurates, is exceedingly slow, and the surgeon, the patient, and the relatives are apt to lose patience, but there seems to be no way except the one above mentioned and similar ones to hasten the healing process and these unfortunately, are but seldom applicable. This disease has been unusually prevalent here during the last two years, so that it is well for us all when called to a case of so-called rheumatism or other pains in the bones of a child to watch the case carefully until we are sure that a true inflammation of the bone does not exist.

ASCITES DUE TO SYPHILITIC CIRRHOSIS OF THE LIVER TREATED BY EPIPLOPEXY.

By Minora E. Kibbe.

Read before the Saturday Night Club and the San Francisco County Medical Society.

As it is generally conceded that the use of alcoholic liquors plays a large part in the etiology of cirrhosis of the liver with ascites, such stimulants, if used, must be discontinued. Judicious exercise, agreeing as nearly as possible with the inclination of the individual, so that there may be an exhilaration of mind, as well as of body, should go hand in hand with hot baths, massage, and friction to the skin, keeping it moist and active. The diet should be easily assimilated and taken in small amounts, fats and sugars being eliminated. The use of diuretics and cathartics is indicated to keep the intestinal and urinary tracts clear. Nothagel advises small doses of calomel, 1-10 of a grain, often repeated. Billings,[1] of Chicago, notes good results from use of ammonium chlorid, gr. 10, after meals, as Kussmaul advises. Musser,[2] of Philadelphia, has found good results from use of apocynum cannabium, drops 15 to 30 four times a day, or better when it can be borne, copaiba oleo resin, m. 10 three times a day. The use of the iodids is also advised by many authors. All are practically agreed on tapping as soon as fluid accumulates. A number of cures are recorded in which ascites has disappeared after from 30 to 60 tappings. A case is recorded by Davies,[3] where 100 tappings were made in four years, the patient finally dying of cardiac failure. Musser[4] has seen ascites cured and the cirrhotic process arrested after 150 tappings.

Some cases of ascites have improved after simple laparotomy. Dr. Wharton reports a case operated on for him by Dr. Pepper. The patient improved much for a time, lived six or eight months very comfortably, and did not require tapping during that time. Other similar cases have been reported by Routier, Hartman, Sigonde, and others. On the other hand a case of Talma was not improved by exploratory incision, but later the omentum was sutured to the abdominal wall with good results. Talma, of Utrecht, in 1889, first suggested operative relief for this distressing condition. Since then omental fixation with slight difference of technic has often been used. Rutherford Morrison[5] and Drummond, of Newcastle, independently of Talma, and at the same time, devised a similar method. The operation is hence variously known as the Talma, the Morrison, and the Talma-Morrison. Morrison had the good fortune to first secure a successful result. The operation consists in a median incision above the umbilicus and fixation of the omentum in the incision or to the parietal wall with or without irritation to the abdominal organs. The view is held by these operators that the ascites is due to mechanical obstruction of the portal vein. This is relieved by establishing collateral circulation. Robert Greenough,[6] in a recent journal, gives an extended report of 115 cases. Of these 29.5 per cent died, 29.5 per cent showed no improvement and 40 per cent were improved, or slightly so. Four of those showing improvement died within four months of other causes. Only nine cases were living two years after operation. In 20 cases, where drainage was employed, there was a mortality of 50 per cent, and in 34 cases, where there was no drainage, the mortality was 14.7 per cent, showing strongly the advisability of suturing without drainage. Tight plaster strapping of the upper abdomen is also generally admitted to be desirable, also elevation of the head of the bed, as advocated by Fowler.[7] The prognosis of these cases of cirrhosis has been shown by necropsies to depend largely on the amount of liver tissue still retaining normal function. Those cases in which atrophy was greatest showed least improvement. Mention must be made of the operation devised by Ferrier, and popularized by Delangeniere for biliary cirrhosis. It consists of cholecystotomy and drainage of the bile-duct, the theory being that the cirrhosis is due to infection of the bile ducts through the intestine. Although ascites is not generally present in these cases, patients having ascites have been reported cured by this method. The advocates of the Talma-Morrison operation claim that the Delangeniere operation relieves the ascites through the formation of adhesions, with consequent new blood channels.

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[1] Billings, *Journal A. M. A.*, June 7, 1902.
[2] Musser, *Ibid*, Oct. 5, 1901.
[3] Davies, *Lancet*, Feb. 22, 1902.
[4] Muser, *Jour. A. M. A.*, Oct. 5, 1901.
[5] Morrison, *Brit. Med. Jour.*, vol. II, 1896, p. 728.
[6] Greenough, *Am. Jour. Med. Sci.*, Dec., 1902.
[7] Fowler, *Med. Record*, April 14, 1900.

Case. Mrs. L. Age 35. Washwoman. Seamstress. Husband a sailor. Three children. Eldest dead, cause unknown. Two boys, 14 and 13, living and well. Youngest shows Hutchinson's teeth. Her first two children said to have weighed about 13 pounds. During delivery of first, perineum was badly torn. During recovery from second confinement, she says the doctor gave her blue mass in such quantities that her mouth became sore. Never remembers having a sore or rash or eruption on the body, except once when she had hives that itched greatly, and which she says the doctor cured in a few days with soda solution. Has lost a good deal of hair, and has had sore throat, but she never remembers of it having been very sore. Has not menstruated for two years. Had a supposed wen removed from her forehead sometime since. She said the doctor said it was necessary to scrape the bone, and a deep scar remains. Present History.—About two years ago first noticed that her feet swelled. About nine months previous to her seeing me her abdomen commenced to enlarge. She entered the hospital and was tapped three times, became discouraged and returned home. I first saw her about September of last year. She was given mercurial inunctions and potassium iodid; the latter nauseated her, and was changed to Gardner's syrup of hydriodic acid. Abdomen was tapped eight times between September and January, approximately 10½ pints removed at each tapping. Examination of urine at that time showed 4 per cent albumen, and numerous granular and hyalin casts. Specific gravity 1,010 and the specific gravity of the ascitic fluid 1,008. Dr. Emma K. Willits and Dr. Philip King Brown were kind enough to see the case with me. The abdomen was found greatly distended with fluid. After tapping, the liver was found enlarged, reaching almost to the pelvis and within about two fingers breadth of the umbilicus. It was nodular and presented a hard, sharp, free edge. Spleen reached more than half way to the umbilicus. Uterus and adnexa atrophied. Complete laceration of the perineum. Lungs fairly sound, a few crepitant rales heard. Heart tones clear and regular. Cervical, epitrochlear, and inguinal glands palpable. Sacral region bright red, due to continued recumbent position. Legs and feet greatly swollen. She complained chiefly of distention of the abdomen and pain and tenderness in the right hypochondrium. A diagnosis was made of syphilitic cirrhosis of the liver with ascites, based on the following probabilities: 1. Her husband was a sailor. 2. She had led an irregular life. 3. There was general glandular enlargement. 4. Amenorrhea had ben present for two years, occurring long before time for normal menopause. 5. There was improvement in condition and decrease in size of the spleen under specific treatment. Dr. Somers was also consulted with and advised operation, with the idea of establishing a collateral circulation, by uniting the omentum to the anterior abdominal wall. She was accordingly removed to Lane Hospital. When the abdomen was opened we found slight adhesions between the surfaces of the spleen, liver, and omentum, and the parietal peritoneum, and also on the abdominal wall at site of previous tappings. A large amount of sero-sanguineous fluid escaped. The liver was congested, hypertrophied, nodular and hard, and along the anterior edge were seen at places tiny white flecks. Spleen and gall-bladder were enlarged. The surface of the liver and diaphragm were well rubbed with gauze, and the great omentum stitched in two rows of sutures to the abdominal wall. Abdomen was closed in three layers and compressed tightly with adhesive strips encircling the body. The head of the bed was kept elevated. There was absolutely no shock following the operation. Patient was not nauseated. Slept well, had no rise of temperature and the morning after the operation, looked brighter and better than I had seen her since treating her. She had some pain for a day or two in the abdomen. Specific treatment was commenced immediately and has since continued. She left the hospital in seventeen days, feeling well. Some fluid accumulated in the abdomen, but has since been absorbed. It is now nearly six months since she left the hospital. The abdomen has decreased in size, so that she does not look or feel ungainly as before. For two months she felt so well, being about her house, doing the work for herself and her two young sons, that she took upon herself the house work of a weaker neighbor. In a month her left leg commenced to swell again and she was persuaded to give up the extra work. The swelling was relieved by massage and bandaging. Since going home she had had two or three attacks of epistaxis and occasional attacks of periostitis. The liver is now more nodular than before the operation, considerably smaller and less hard.

Though the time which has elapsed since the operation has been too short to judge of ultimate results, I am sure that the relief from suffering, and the pleasure of being up and about her work, have more than compensated our patient for the discomfort of the operation.

HOMO DELINQUENS.

By Knud Pontoppidan, M. D., Prof. Med. Jurisprudence, University of Copenhagen.

[Continued.]

Translated by A. W. Hoisholt, M. D.

The statement which criminal anthropology, first and foremost, thinks itself able to verify, as may appear from what has been said previously, is this, that the criminal class, in the above sense, is characterized by bodily as well as mental peculiarities. As far as external characteristics are concerned, one has at all times been thought to be able to recognize a criminal type, which, for instance, has been made use of in pictures and dramatic demonstrations. Individuals, at any rate, who have committed acts of violence, are supposed to be characterized by common and coarse features. Even during the middle ages a law is supposed to have existed which provided that when two persons were suspected of a crime, the uglier of the two should be punished. Nowadays one is, of course, not satisfied with such a summing up of physiognomic impressions; one looks for anthropological features, which are demonstrable in a more objective and stringent manner. It may at once be said that the characteristics found in this way in the main concide with the so-called signs of degeneration which are recognizable in states of mental defect in general. Here lies a rock upon which the medico-legal coresearch at times threatens to strand. Something in the nature of a contrast is produced especially by this, that the jurists make a fixed distinction between the value of the internal and that of the external anthropological manifestations. They even frequently show a decided disinclination to recognize at all the purely bodily "stigmata degenerations;" they will not hear anything about crooked noses and projecting ears. Even the progressive members of the legal profession, who are otherwise willing to enter upon scientific views, show traces of the old suspiciousness whenever physicians bring forward evidence acquired by a purely empirical observation and experience. To the physician these noses and ears, of course, appear in quite a different light. They are used to busying themselves with what they see, with what may be immediately recognized, and drawing their conclusions accordingly. When the question concerns anthropological facts, the development of a difference of opinion can not, therefore, be avoided. The two sciences have for so long a time each had its own way of looking at things, its own method, that to find that difficulties in the way of a mutual understanding no longer presented themselves would be inconceivable. The efforts of the physician are directed toward a recognition of how the mental manifestations are normally, as well as abnormally, dependent upon the bodily organs. A mere psychological knowledge of a condition, however comprehensive, profound, and penetrating, can never be of any absolute value to him as physician. The more he is referred to purely psychological facts, which are not of such a nature as to be directly observed, the less convincing are they to him, the more uncertain he becomes, because that which in his opinion makes psychic phenomena symptoms of disease is alone their origin, their pathological dependence. As for the lawyers, it may be said that they have too long regarded psychology as a science which busies itself altogether with the mental manifestations to be able to keep apace with the physicians where the problem before one is to make psychology a physiology of mental life. It is this which continues to separate them. The more the physician, in his efforts to find solid ground to stand upon, leaves the purely psychologic phenomenology, and brings physiological and pathological facts into the field, the less is the jurist satisfied with his demonstration. He complains that he is forced to hear all about conditions of menstruation and blows on the back of the head, and of late also about the running together of the eyebrows, sessile ear-lobes,—subjects which he is unable to pass upon. He demands a documentation which to him appears to be possessed of a sufficient psychological truth and power of conviction. It is especially in concrete legal cases that the difficulties unmistakably show themselves. The judge will not permit the physician to diverge or to intrench himself within the domain of empiricism; and the physician, on his part, must find it unreasonable that one should so strictly try to hold him to the territory, where one is sure of being able to follow and control him, since the state of facts is such that his professional assistance and special knowledge on the subject had in reality been called upon, because the pure and simple psychological observation had proved itself insufficient. As old Flemming used to say: "Der Arzt soll fur den Richter Fruchte suchen und einsammeln anf einem Felde, wo dieser nur Dornen faud." ("The physician is to try to find and collect fruit for the judge in a field where the latter only found thorns.)

The relative miscredit into which the physical signs of degeneration have fallen is possible to some extent a danger to the future criminological co-research; but one may, perhaps, have reason to hope that the modern era of natural science will bring the parties steadily nearer to unity and understanding. It is, however, not to be doubted that the congenital deviation from the type, which is characteristic of the category of criminals here referred to, takes its origin in certain psycho-physical peculiarities. The ascertainment of this deviation, the diagnosis of the condition, can not be assured until psycho-physics has become so developed as to be able to teach us the true connection between the two series of phenomena. Until this has been accomplished, each symptom can have but a conditional value; we must collect our material without being certain that it will not later on be necessary to reject it. But until this time comes, equal rights must rule, because the physical signs are not in themselves more uncertain or unreliable than the psychical. A severely critical valuation is, of course, necessary, but why should one not be able to draw as justifiable and general conclusions from the outward signs above referred to as from so many other physical peculiarities?

DEPARTMENTS

OBSTETRICS AND GYNECOLOGY.

By Wallace A. Briggs, M. D., Sacramento, Cal., and George B. Somers, M. D., San Francisco.

Importance of Repair of Small Cervical Lacerations.—Burtenshaw calls attention to the effects produced by neglected lacerations of the cervix. He says: "Every gynecologist sees cases of uterine subinvolution associated with chronic endometritis or chronic endocervicitis; and in very many of these cases pronounced nervous symptoms are present, which undoubtedly are reflex in origin, and which may be traced to the presence of an accompanying cervical laceration. This lesion may be so small as to almost defy detection under ordinary examination, yet its influence may be as great along certain lines as that of a lesion far more pronounced. A wound of the cervical tissue, unless almost immediately closed by natural processes, undergoes granulation, with resultant deposition of more or less scar tissue, and this, even in the case of very small tears, acts as an irritant, which will cause congestion of the parts."—Philadelphia Medical Journal, May 9, 1903.

An Uncommon Case of Extra-Uterine Pregnancy.—Galeazzi records the following case: A woman, aged thirty-nine, first menstruated at fifteen, married at twenty-two, had a child a year later, which she suckled. After this pregnancy she complained of more or less pain in her left hypochondrium. At thirty-one menstruation ceased for three months, and was accompanied by all the signs of pregnancy. At the end of three months she was seized with sudden pain in the lower abdomen, lasting several hours, and followed by menorrhagia lasting eight days. A year later bladder disturbance set in, consisting of severe pain, burning, tenesmus, and the passage of pus and mucus in the urine, but no blood. In February, 1901, she had menorrhagia for fifteen days, and from that time the bladder became much worse. Some days before admission to the hospital she had acute retention of urine, due to the impaction of a piece of bone in the urethra. Suprapubic cystotomy was performed, and a considerable number of fetal remains removed from a cavity communicating directly with the bladder. This was therefore probably a tubal pregnancy, which had ultimately burst into the bladder. The after history of the case was satisfactory.—Gion. dell. R. Accad di Med., Torin, January, 1903.

The Tube and Uterus in Menstruation.—Moltzer, in an inaugural thesis, examined healthy tubes removed from two patients during the menstrual period. In one case there was an ovarian cyst. Before the parts were disturbed, a drop of blood was seen issuing from each ostium, and the tubes were markedly hyperemic. The vessels were found on microscopic examination to be dilated; the lymphatics contained many multinuclear leucocytes, which also lay in quantities under the epithelium. The epithelial cells showed vacuolation. In no part of the tube were they seen to be broken down or deficient. Towards the ostium hemorrhagic infarcts and hyperemia were more marked than proliferation of leucocytes. There was no true submucous hematoma. As the inner half of the tubal canal was quite free from blood, the hemorrhage could not have originated in the uterus. There was no evidence of catarrh or other inflammatory changes, and as the veins in the tube were not more engorged than the arteries, the appearances actually detected could hardly be due to venous stasis caused by the ovarian tumor. In the second case, the fimbriæ were stained by free blood and the microscopic appearances of the tube substantially the same as in the first. Moltzer concludes that the tube naturally has a share in menstruation. Blood manages to escape into the lumen without breaking down the epithelium, which is just what De Sinety observed in the menstruating uterus.—British Medical Journal, March 7, 1903.

Twin Pregnancy in the Fallopian Tube.—Dr. E. Ferroni ("Centralblatt fur Gynækologie") reports the case of a woman thirty-two years of age, whose left Fallopian tube was removed on account of a hemato-salpinx, which could be felt as a mass in the cul-de-sac of Douglas. The mass showed two tumefactions, an inner, large, dark red mass, and an outer, smaller, and lighter-colored one. Each of these masses contained an ovum; that is, the tube was the seat of a twin pregnancy, although the ova were of different periods of development. The author thinks the second ovum reached the tube and was impregnated there after wandering from the ovary of the opposite side.—New York Medical Journal, April 18, 1903.

Fibroids.—In an article by Archibald McLaren, of St. Paul, Minn., the first paragraph reads as follows: "Fibroid tumors, or, more properly, fibromyomata of the uterus, are very common in women in middle life. The small ones produce, as a rule, no symptoms, and need only be kept under observation. I have a few patients with such tumors who come to see me for examination once in six months, and one whom I particularly recall, whom I have seen at irregular intervals for the past ten years. There has been no change that I can appreciate, and, as they suffer no distress, I have not suggested any interference. On the other hand, I have never seen a fibroid disappear or lessen in size either before or after the menopause, and I have seen many women in whom the menopause had been greatly prolonged, and the change of life delayed for several years."—American Gynecology, June, 1903.

Present Position of Hysterectomy for Fibroids.—In an article by Skene Keith occur the following suggestive lines: "What has a woman to gain by hysterectomy?—In some cases nothing at all; in very many very little, indeed; in some a life of comfort and happiness, as against a life of misery; in a few life itself. It is easy to understand how it is that, as a rule, the older men in the profession, as compared with the younger, are averse to hysterectomy. They have seen for themselves fibroids grow and eventually lessen in size or disappear after the menopause, this decrease in size sometimes commencing before menstruation had entirely ceased. On the other hand, the younger men have not had time to see this, nor perhaps have they given the tumors or the patients the chance of waiting until the change of life."—American Gynecology, June, 1903.

The Weight Wave of Menstruation.—W. T. Belfield ("Journal American Medical Association," June 13, 1903) finds that during several days, especially the first, preceding the flow a progressive increase of from two and one-half to five pounds occurs, which may be from one and one-half per cent to five per cent of the usual weight. Half of this may be lost in sixteen to eighteen hours. The flow begins during rapid loss, the blood often following immediately on the crest of the wave. It terminates about when the weight reaches the premenstrual level. The gain is due to diminished excretion, especially of water; the loss to rapid excretion of carbon dioxid and water, not to the trifling loss of blood.—American Medicine.

Inefficiency of Immediate Repair of the Perineum.—In an interesting article on immediate repair of the perineum, W. E. Ground finds that in the majority of cases even the most painstaking repair of the perineum immediately after labor is not satisfactory. He concludes as follows: 1. That almost every woman suffers injuries during confinement from which she does not recover, unless she is subjected to a secondary operation for repair of lacerations of the pelvic floor. 2. That immediate suture of apparent lacerations does not restore pelvic support in the vast majority of instances. 3. That from one to two months after labor the woman should be subjected to a thorough examination with reference to the integrity of the pelvic floor. Should indications of unrepaired lacerations exist, as evidenced by vaginal relaxation and prolapse, uterine displacement, etc., an operation for immediate repair should be made before the woman's health has been impaired.—American Medicine, June 6, 1903.

Saline Infusions in Abdominal Operations.—J. G. Clark, of Philadelphia, presented a paper before the section on obstetrics and diseases of women of the American Medical Association. He presented the results of 250 abdominal cases, and affirmed that it had been established beyond doubt that the use of saline infusions does not increase the mortality or post-operative complications. On the contrary, the mortality is decreased, and post-operative complications, such as thirst, vesical irritation, and renal complications are greatly lessened. A study of a series of animals in which a virulent culture of staphylococcus aureus was employed demonstrated that 1 cm. of undiluted bouillon culture would invariably kill the animal when introduced into the abdominal cavity; whereas the same amount of culture introduced into the peritoneal cavity and then diluted with 100 cm. of hot normal salt solution resulted in the saving of 48 per cent of the animals and in prolonging the life in lethal cases. Hot salt solution when introduced into the peritoneal cavity acts by increasing leucocytosis and diluting the toxic products, thus hastening their elimination.—Society Report, American Medicine, June 20, 1903.

Marked Elongation of the Cervix Uteri.—Bovee reports a case that complained of "falling of the womb and bladder." Examination revealed the cervix protruding about two inches through the vulva, and covered with a very much thickened and tough mucous membrane; it was pushed back into the vagina with considerable difficulty. Later the uterus and appendages were removed. The canal of the uterus was six inches in length, that of the cervix four and one-half inches, and that of the vaginal portion of the cervix two and one-half inches.—New York Medical Journal, April 18, 1903.

Missed Labor after Laceration of the Cervix.—A woman who judged herself to be seven months pregnant was kicked by a calf in the region of the stomach. She felt no more fetal movements; and she lay abed a few days, though more on account of alarm than of actual pain. After that she went about her usual household duties. She went far beyond term, when a macerated fetus was removed piecemeal. It was found that the cervix had been lacerated, but without implication of the body of organ. If it was really in the region of the stomach that she was kicked, it seems remarkable that the blow did no other damage than that of rupturing the cervix uteri.—New York Medical Journal, April 18, 1903.

Cysts of Inguinal Canal.—Dr. H. Macnaughton-Jones reports two cases of cysts in the inguinal canal. The first simulated a hernia, and had been kept up by a truss, but became irreducible and increased in size. On operation it was found to be a cyst, containing blood and intimately connected with the round ligament in a patent canal of Nuck. The diagnosis in the second case was also difficult, but at an operation for salpingo-oorphorectomy and retrofixation, the round ligament was found spread out over and intimately attached to a cyst in an otherwise normal canal. He concludes that every doubtful swelling in the inguino-labial region indicates operation.—British Medical Journal, Feb. 28, 1903.

Prevention of Pelvic Disease after Labor (J. F. Baldwin, A. M., M. D.).—An overlooked laceration of the perineum, even if very slight, furnishes a point for puerperal infection. A lacerated cervix rests in the sterile region of the vagina, but a lacerated perineum is in the region constantly exposed to infection. This exposed surface is promptly removed by an immediate operation. There is no excuse for a failure to detect this injury, since an examination under the eye should be made in every case, nor is there any excuse for failure to close the laceration immediately, since the materials for so doing are in every house. A small darning needle or a heavy sewing needle, with its temper removed through the center by heating so that it may be somewhat bent; silk, cotton, linen, hair from a horse's tail,—all are everywhere available, can be promptly sterilized by boiling, and will answer all practical purposes. The fact that lacerated cervix is in the sterile zone, and will very likely heal satisfactorily renders its closure of little importance.—Journal A. M. A., Feb. 15, 1902.

SURGERY AND ANATOMY.

By Wallace I. Terry, M. D., and F. Dudley Tait, M. D., San Francisco, Cal.

Intestinal Perforation During the Course of Typhoid Fever and Its Surgical Aspects.—Briggs has dealt with this subject in a thorough and judicial manner, and, while no new points have been brought forward, his grouping of the subject-matter is well done, and should prove very useful. The importance of perforation as a complication of typhoid becomes apparent from the figures he quotes from Taylor. There are about 50,000 deaths annually in the United States from typhoid, and of these thirty-three and one-third per cent, or 16,660 are due to perforation. When we realize that from 5,000 to 8,000 of these could be saved by early operative interference, the question of diagnosis is of vital importance. He makes a plea for surgical observation of cases of typhoid, for it should be recognized that perforation is a surgical and not a medical complication of the disease. In considering the diagnosis of perforation, he thinks one can entirely overlook as etiological factors the period of the disease in which the perforation occurs, the severity of the disease, the occurrence of constipation or diarrhea, the question of age, sex, and color, and the occurrence of hemorrhage from its purely etiological standpoint. The signs and symptoms upon which one is forced at the present time to rely mainly in making a diagnosis are pain, sensitiveness, muscular resistance, altered respiration, alteration in rate and quality of the pulse, and evidences of systemic shock. In the differential diagnosis, he considers pleurisy and pneumonia, which sometimes, though rarely, give a picture resembling perforation, especially because of referred pain; iliac thrombosis, which is not so difficult to diagnose; and hemorrhage which is apt to lead to serious errors, more because the symptoms which are really due to the perforation are ascribed to hemorrhage. Appendicitis, peritonitis, intestinal obstruction, suppurating mesenteric glands, and cholecystitis are to be considered, but as they are surgical conditions demanding interference, the question of exact diagnosis is not so essential. In those cases where a differential diagnosis is very difficult and misleading, one is justified in diagnosing perforation, since the gravity of delay in perforation far exceeds that of exploration. The operative treatment advised by the author is along well-recognized lines, and need not be considered here.—American Journal of Medical Sciences, May, 1903.

Primary Carcinoma of the Vermiform Appendix.—Elting has made a careful study of all the reported cases of this rare condition, and sifts them down to twenty, which were well authenticated by microscopical findings. To these he adds three cases which he examined. He believes, from his study of the subject, that primary carcinoma of the appendix is not of such rare occurrence as has been hitherto supposed. He also finds that it shows a tendency to develop at a comparatively early period of life, and does not tend to extension or metatasis.—Annals of Surgery, April, 1903.

A New Method of Correcting Flexion Deformity at the Knee-Joint.—As has been noted, attempts at correcting flexion deformity at the knee frequently result in a backward subluxation of the tibia. This posterior displacement is an unsightly deformity and a source of weakness and discomfort, and it is with the idea of preventing it that Whitman has devised a new method. Instead of using the tibia as a lever in correcting knee flexion, he fixes the tibia, and employs the femur as a lever. The patient, anesthetized, is turned face downward upon the table and the trunk elevated sufficiently to allow the tibia to rest on the table. The head of the tibia is then held against the table, and the contracted ham-strings forcibly massaged. As the resistance lessens, the trunk is lowered, and the thigh is pressed downwards. Sometimes a second operation is required to complete the correction.—American Journal Medical Sciences, May, 1903.

GENITO-URINARY DISEASES AND SYPHILIS.

By G. L. Eaton, M. D.

A Convenient Method of Catheter Sterilization.—Many methods have been suggested for the sterilization and transportation of catheters, some being meritorious, and others not. I have found the following method to meet all requirements in simplicity and efficiency: Take an ordinary Petri dish of medium size, and into it coil the catheter to be sterilized; the dish with its contents is placed in any ordinary steam sterilizer for fifteen to twenty minutes; the same is then perfectly sterile, and can be transported and used at any time and place by removing the lid of the dish.

Fatty Degeneration of the Bladder.—G. F. Lydston, M. D., states that fatty degeneration of the bladder and the prostate gland is not generally recognized, and in the same article gives the history of three cases, in which he also records the occurrence of sudden retention of urine in the old or middle life, with no perceptible prostatic obstruction. He also believes that alcoholism is an important etiological factor, and that the acute retention found in these cases is frequently the result of fatty degeneration, producing a condition of atony. The degeneration, in his opinion, is not limited to individuals who are free from prostatic enlargement and obstruction. Furthermore, he considers this condition as a predisposing factor to vesical rupture in case of traumatism.—Journal of Cutaneous and Genito-Urinary Diseases.

The Bacillus of Syphilis.—It is many years since Lustgarten first announced the discovery of a specific bacillus in the lesions of syphilis. It has been repeatedly found in primary, secondary, and tertiary syphilitic lesions, and in its chemical reactions very much resembled the bacillus tuberculosis. In many respects it possessed the characters of the smegma bacillus, and it has been repeatedly urged that this latter organism was mistaken for the specific bacillus of syphilis. But is was impossible to cultivate the bacillus of Lustgarten, while the smegma bacillus grew on artificial media. But actual proof of the relationship of this organism to syphilis has been wanting, and for many years text-books have referred to the discovery of this organism without comment. In the last year, Drs. Max Joseph and Piorkowaki have been engaged in a remarkable research, which is strongly convincing that the specific germ has at last been discovered. Dr. Joseph began with the well-known fact that a syphilitic male can infect a woman through the semen. Therefore he reasoned that the cause should be found in the semen of the syphilitic; and investigation revealed a specific bacillus. Normal placentas as sterile as possible were always taken, and kept under observation for some time in large, sterile, petri dishes, in order to use those free from germs. Then with sterilized instruments further parts, especially of the maternal side, were placed in sterilized petri dishes and inoculated with semen, and then placed in an incubator at 37° C. On the placenta inoculated with the syphilitic semen there were after twenty-four hours small, dew-drop-like colonies, which upon investigation showed a rod-shape bacillus between 4 and 8 micra long and .2 to .3 m. in thickness, resembling the bacillus of diphtheria, stain positive by Gram's method, and unlike the bacillus tuberculosis, are not acid proof. On agar, they rapidly degenerate after a few generations. A smear preparation is stained with Loeffler's alkaline methylene solution and thoroughly heated. After cooling slightly, it is decolorized by a three per cent acid alcohol for a few seconds. Then it is washed in water counterstained with weak carbo-fuchsin solution. The blue granules are visible in the poles instead of in the red body. The semen of syphilitics in the virulent stage always contains the bacillus. They do not conform to Koch's law.—Deutsche Medizinische Wochenschrift, 1902, Nos. 50, 52.

MENTAL DISEASES AND MEDICAL JURISPRUDENCE.

By A. W. Hoisholt, M. D.

Localization of the Mental Faculties in the Left Prefrontal Lobe.—In the course of a large experience extending over a series of brain-lesions, which he has classified under the headings of atrophies, pistol-shot wounds, abscesses, and tumors, Dr. Phelps has made observations connected with the localization of mental faculties. After careful analysis of all his cases and perusal of considerable literature bearing on the subject, he considers himself justified in formulating the following three propositions: 1. The more absolutely the lesion is limited to the left prefrontal lobe the more positive and distinctive are the symptoms of mental default. 2. The integrity of the mental faculties remains unimpaired in a lesion of the right frontal lobe, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere. 3. The exceptional instances in which seemingly opposite conditions exist are always reconcilable, on more careful examination, with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side.—American Journal Medical Science; American Journal of Insanity, January, 1903.

Occidental Medical Times

Communications are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Published monthly.

Office of Publication, : : : 1121 Sutter Street, San Francisco.

"THE PRINCIPLES OF MEDICAL ETHICS."

At the New Orleans meeting of the American Medical Association the report of the "Committee on Medical Ethics" was unanimously adopted. This report, entitled the "Principles of Medical Ethics of the American Medical Association," is to take the place of the "code" in regulating the conduct of its members throughout the United States. The special committee in its preface states that it has followed the phraseology of the "code," aiming at condensation and clearness of expression. The verbosity and diction of the older document has often been the subject of criticism, and the committee in this respect has made considerable advance. The emphasized points of the revised code, for after all it is but a revision, touch upon the same evils that have haunted the practice of medicine for centuries. These evils are corollories of the practice of medicine, brought about to a very great extent by our own deeds and the avariciousness of pharmacists, opticians, etc. They will never be remedied by any "principles" or code, unless the requirements are put into force and into practical application by individuals and societies. The effect of the new regulation will be as futile as the old unless the profession will practice what it preaches. The abuses are as rampart and as vicious to the integrity of the profession and the individual to-day, as they were before the code was written. The struggle for existence is as keen; the commercial spirit of our time is not conducive to the amelioration of these troubles; the tendency is onward and downward, and there is nothing in the rehabilitated "principles of ethics" that will stem the tide. There is little use in urging that "it is incompatible with," "derogatory to," etc. If the Association really desires to check these irregularities, let it come out and stand firmly by "thou shalt not steal" cases, accept percentages, advertise in papers, employ cappers, etc., and if we must change our code, let it be something specific, simple, direct, and forceful.

The "Principles of Medical Ethics" contains nothing not found in the old code and omits some things that were definite and unmistakable in their meaning. If the report of the committee be looked upon as a guide for the mere government of the society in a suggestive way, leaving the practical application of governing and criticism of the conduct of members to the county and state societies, then it is ample in purpose. The committee insists that this document is to bear a relation to the Association and to the state and county societies, similar to that of the Constitution of the United States to the several states. As a form or skeleton of government the comparison is possibly a good one, but it differs remarkably from the Constitution in that the vital and essential points at stake are omitted or scarcely inferred.

The paramount question is whether consultations shall be carried out as prescribed by the code, or indiscriminately without reference to creed or ism. On this point the report is silent, though it says:—

"It is incompatible with honorable standing in the profession for physicians to designate their practice as based on an exclusive dogma or a sectarian system of medicine."

If this paragraph means anything, it contravenes the teachings of our fathers and places all graduates of medicine no matter where, when, or how, on the same plane, raising the ignorant to the level of the learned and debasing the honest man. This is the modern tendency, the aim of commercialism, and of those who see nothing but a trade in the practice of medicine. The committee was possibly very wise in leaving the whole subject of ethics in practically the same form in which it has been debated for years. Its very indefiniteness and its omission on the crucial point will save much trouble and debate for the parent body. It will be sufficient if the state and county associations can reach an honorable settlement of the matter.

FALSE PLAGUE REPORTS AND MORE PLAGUE.

The "Evening Bulletin" for July 7, 1903, with its characteristic and persistent love for untruth, in criticizing the cause for the removal of Mr. Santos E. Santos as Consul of Ecuador, says: "When the Ecuadorean Government asked him for the information upon the subject, Mr. Santos went, naturally, to Mayor Schmitz. The mayor, quite properly, gave him a letter stating emphatically that there never had been a case of bubonic plague in San Francisco. This information is corroborated by a letter received by Mr. Santos from Dr. Foster, Secretary of Board of Health. Relying on the Mayor's letter and on common sense, Mr. Santos reported to his government that the plague reports were false." Without further comment, and in defense of the honest course of Dr. Foster, we present the following letters:—

Dear Sir: Your letter of July 9 just received. I am extremely glad of this opportunity to correct the statement in the Bulletin of July 7. I enclose you a copy of the letter to Mr. Santos. In the first paragraph I speak of no suspicious case since March 16. This is in reply to the direct question from him in regard to the existence of plague. At that time I was not aware of the case that occurred in June, having the day before returned from the East. I consider that San Francisco is in as good a sanitary condition as most cities, and that with the care that is being exercised there is no danger of the plague spreading. But that it exists I have always believed, and have stated so without hesitation.

Yours truly
N. K. Foster, Sec.

Hon. Santos E. Santos,
Consul de Ecuador, San Francisco,

Dear Sir: In response to your communication of June 16, I beg leave to say that since March 16, 1903, not even a suspicious case has occurred in San Francisco. The United States Public Health and Marine-Hospital Service, State Board of Health and Board of Health of San Francisco are working conjointly with the determination of stamping out any and all contagious diseases. The Conference of the State Boards of Health with the United States Public Health and Marine-Hospital Service held in Washington, D. C., June 3, 1903, and composed of the most eminent sanitarians of the United States, and presided over by Surgeon-General Wyman of the United States Public Health and Marine-Hospital Service, passed the following resolution:—

"Whereas, the Conference of the State Boards of Health of the United States with the Public Health and Marine-Hospital Service, having confidence in the earnest efforts and ability of the Governor and State Board of Health of California acting in harmony with the Bureau of Public Health and Marine-Hospital Service to thoroughly eradicate bubonic plague heretofore existing in the city of San Francisco do resolve that in the judgment of this Conference, so long as the present effective work is continued, there is no need for quarantine restrictions of travel to or from that state." I assure you that San Francisco has never been in as healthful and sanitary condition as at present. The officials of that city are acting and will continue to act with the State Board of Health and the United States Public Health and Marine-Hospital Service, and will see that no contagious disease is allowed foothold therein. Everything that sanitary science can suggest or money procure has been provided, and I have no hesitation in assuring you that in my judgment and in the judgment of those competent to speak, there is no danger from bubonic plague in San Francisco.

I have the honor to remain yours very truly,

Secretary of the State Board of Health.

Moreover we append the histories of the last three cases, one of which was seen in consultation by Dr. C. N. Ellinwood, who confirmed the diagnosis. The place of death shows that the infection has spread to the Latin quarter. 96. Chin Guie, male, born in China, widower, died at 743 Jackson St., July 15, bubonic plague. 97. Pietra Brancata, female, white, sixty years old, born in Italy, divorced, died at 19 Jasper Place, July 20, bubonic plague. 98. Pietro Spadafor, male, white, thirty-four years old, laborer, born in Italy, married, died July 20 at Southern Pacific Hospital, came from 19 Jasper Place, bubonic plague.

REMOVAL NOTICE.

The office of the OCCIDENTAL MEDICAL TIMES has been moved from 1121 Sutter to 1220 Sutter Street.

CORRESPONDENCE.

I have herewith enclosed a little more of Pontoppidan's article on "Homo Delinquens." There are two more parts to it, besides the case quoted, but I shall not have time to translate it until after my return; and perhaps you may conclude not to put it into the journal.

Since I wrote you a month ago, Prof. Kraepelin has accepted the call to the University of Munich—a great loss to Heidelberg. He accepted it after he had been refused by the government of Baden a request for a new building for the psychiabric clinic and laboratory. In Munich they are putting up a large institution with all modern equipments in this line, a reception hospital for insane, where the acute cases only are treated. Reception hospitals for this purpose are now being erected by the State of New York, and California should have a similar institution to be located in the immediate neighborhood of San Francisco.

Prof. Kraepelin also exacted as a condition for his acceptance of the call, a year's leave of absence, during which he will make a trip around the world for observation and experience in his line.

There is a great deal of talk here as to who will be his successor. One rumor has it, that Prof. Binschwanger of Jena, who recently refused a call to Halle, will be called, but it is possible that Prof. Nissl—Kraepelin's first assistant—in whose laboratory I am working, will be selected. If he is not appointed I fear Heidelberg will lose the best informed and highest authority in Germany, if not in the world, on the anatomy and pathology of the brain-cortex.

Very truly yours
Andrew W. Hoisholt.

Pension Anglise, Heidelberg,
July 14, 1903.

SOCIETY PROCEEDINGS.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, April 1903.

The president, Thomas Ross, M. D., in the chair.

FRACTURE OF SUPERIOR MAXILLA.

Dr. W. J. Hanna: I wish to report a case to-night that came under my observation on the 8th of last September, and which caused me to write the paper of the evening. The young man sustained a fracture of the inferior maxilla, and the result you can see for yourselves. It was treated with an interdental splint. He was thrown from a wagon when driving through the country, and sustained a complete fracture of the lower jaw. I had intended to have an X-ray photograph, but was informed I could not get an X-ray picture of the injury.

Dr. John White: Dr. Hanna is to be congratulated upon the timely presentation of this paper. His description of the interdental splint has been well rendered. Fractures of the lower jaw usually occur between the middle of the ramus and the symphysis, and are generally produced by direct violence. Fractures may also be produced by pulling of the teeth, and some fractures of this kind are produced by gunshot wounds. Diagnosis of fracture of the lower jaw is easily made; as a rule, the cardinal points being swelling, pain on movement, tenderness on pressure, and crepitus. Fractures of the body are sometimes easily handled by wiring to the teeth on each side. Where double fractures of the lower jaw occur, a plaster-of-Paris cap, on gauze or muslin, in which holes are punched, molded to lower jaw, and allowed to dry, serves as good a purpose as any. Some time ago I treated a case, that of a tramp who had been shot by a constable. The left lower maxilla was broken, the break ranging toward the angle of the jaw. Owing to the character of the wound, a cardboard cap was the only appliance that could be used effectually. This was kept in as good position as possible by a bandage. We also wired to the teeth on either side of the fracture. Owing to laceration of the soft parts of his mouth, the odor was very offensive, it being necessary to fumigate the ward in which he was kept three times a week. Later on, owing to necrosis, an abscess formed, which was opened and several fragments of bone removed. We failed to find the bullet. After the abscess was voided and the fragments removed, patient went on to recovery, with the bullet in his jaw. Considerable deformity existed after wound healed. Later I treated a young man with a double fracture of the jaw, he having been struck on the left side of the face, fracturing the left lower jaw at the ramus and the right lower jaw about the middle of the body. Crepitus was present on the left side of the face. His jaw was put up in a wire-splint cap, which was removed in four weeks. He went on to recovrey without any discomfort. In this case there was no displacement on the right side. Personally, I have had no experience with the interdental splint, but the result obtained by Dr. Hanna in the case which he presented to-night shows what excellent results can be obtained by adopting that method in suitable cases.

Dr. W. H. Baldwin: My observation in such cases has been limited. The difficulty of handling fractures with dislocation of the condyle has not been spoken of; also of the coronoid process, which is difficult to get back and hold in apposition. Fractures of the ramus or at the angle I believe would be difficult to hold in close apposition, and I should wire in cases of that kind. Dr. John White has explained in regard to the very offensive odor met with in such cases, where you have breaking of the soft tissues in the mouth. I have seen one or two of that kind that were broken through the mouth and external skin, and left a very bad scar on the face. The interdental splint exhibited by Dr. Hanna is a very apt one. In such cases, if a patient has perfect teeth and the alignment is perfect, it adds very materially in the way of securing good results. If the fracture occurs at the symphysis, slight pressure will retain it in place. The author had his splint made by a local dentist. Where you meet with irregular teeth, with some of them out, the case is more difficult to handle. In such cases it will be difficult for a dentist to get the parts in position for the wax impression. In a case of compound comminuted fracture observed some time ago, no dental splint could be fitted successfully. Wiring was also tried, with the result of depriving the patient of nearly all his teeth. His speech was also imperfect. The case finally recovered, with the jaw-bone three-quarters of an inch out of line. In a patient five years of age, with fracture at the angle, I never worked harder and got less satisfaction. I had the assistance of two consultants, and we worked faithfully for six weeks, but the result was not such as we hoped for; yet nature kindly brought the teeth in apposition when the permanent teeth came in, as they accommodated themselves to the irregular shape of the jaw.

Dr. H. H. Look: My experience in treating fractures of the jaw has been limited. The last patient I treated with fracture of the jaw was struck on the face by her lover. I had a tinsmith make a splint, which served my purpose very well. The result in this case was good.

Dr. E. M. Wilder: In connection with wiring to the adjacent teeth in cases of this kind, I wish to state that I have seen a method used for bringing the parts into apposition which, it seems to me, possesses considerable merit. It consists of placing bands on the adjacent teeth with wires attached on which threads have been cut, both internally and externally parallel with the teeth, and with a small nut tension was taken as the process of repair required. In other words, you could adjust it both internally and externally, and draw the parts into line better than by wiring.

Dr. T. J. Cox: Fractures of the jaw are comparatively easily reduced and retained in apposition in most cases, unless it be one, as Dr. White explained, where there has been considerable laceration of the soft parts. In these cases it is sometimes useless to try to get proper alignment until the primary condition has cleared up. In the way of a solution, I have got better results from the use of aqueous solution of essential oils than anything I have ever used. When it comes to a fracture of the angle of the jaw, it is a hard matter to keep them in apposition. I have never seen any apparatus for this purpose that seemed ideal.

Dr. J. E. Poore: I once saw a peculiar fracture of the inferior maxilla, in which the fracture occurred longitudinally. It was a case of an epileptic, who was standing erect and fell forward, his chin striking the ground first. He fractured the condyloid process, but did not alter the movement of the lower jaw. Mastication was painful. He was fed on soft food, and nothing was done, except to keep his jaw as quiet as possible. The patient recovered. Several years afterwards I saw him, and found there was no apparent damage done to his jaw. There appears to be some danger of dislocating the jaw soon after an accident happens, by the muscles drawing the jaw out of place, even when there is no real dislocation.

Dr. Thomas Ross: It occurred to me that the plan of using nails for securing apposition in cases of fracture of the patella might also be resorted to in cases of fracture of the jaw-bone.

Dr. G. A. White: Fractures of the lower jaw, like fractures of other bones, are of special interest to surgeons. The first time I tried the interdental splint was on a patient sent me a few years ago by Dr. G. L. Simmons. I had Dr. Thomas make the splint, and he made two or three splints before getting one that was satisfactory. The merits of the interdental splint have been set forth in the case presented to us to-night. I am in favor of the interdental splint in suitable cases. There are certain irregularities in the formation of the lower jaw that prevent the universal use of the interdental splint in some cases. We have all seen irregularly constructed jaws, where perfect apposition could not be had under any plan of treatment, because nature did not provide perfect apposition of the teeth. The case the author presented to-night shows a very elegant result, and I wish to compliment him on his success. Fractures of the angle of the jaw are difficult to retain in position. In the case of a child sent me by a country practitioner a couple of years ago, I remember we had great difficulty in getting reduction. I believe Dr. Cox assisted with the case, that of a child five or six years of age, whose injury was at the angle of the jaw. We could get reduction, but could not maintain it. I despaired of getting apposition, and advised that the back teeth be extracted. The case of gunshot wound mentioned by Dr. John White I remember very well. The patient was an ignorant tramp, whose lack of cooperation in the management of his case was contributory to some of the difficulties we encountered. Owing to necrosis, we had to make a second operation. The shot verv likely passed through his mouth, but we were unable to locate it.

STRANGULATED HERNIA.

Dr. W. H. Baldwin: Three weeks ago yesterday I was called to the country, a distance of thirty miles, to see a patient who was suffering from strangulated hernia. It was the size of my fist—femoral hernia. I made considerable traction. As it had been repeatedly returned to its place, I thought I could get it back again. Failing in this, I brought her to the city that afternoon, and between 8 and 9 o'clock Dr. White removed eight inches of gut, and the patient made a complete recovery. The button was withdrawn in thirteen and one-half days.

Dr. G. A. White reported another case of strangulated femoral hernia that was relieved by use of the Murphy Button, with no untoward symptoms following the application of the button.

CEREBROSPINAL FLUID ESCAPING FROM THE EAR.

Dr. W. J. Hanna: A week ago last Sunday night I was called to the Receiving Hospital to attend a man who had sustained an injury about the head that resulted in water running from his ear. He said, "There is nothing the matter with me, except some water running out of my ear." He said that a few days previous to that time he came in from the Rancho del Paso, got out with the boys, and drank some champagne, and the next morning he found himself in the city jail. He had an indistinct recollection of having fallen down some steps. Water was running out of his ear. The case puzzled me, as I had never seen anything like it before. I called in Dr. W. E. Briggs, who, with the use of the speculum, showed that the ear-drum was ruptured, and that the fluid was certainly cerebrospinal fluid, the quantity which escaped being sufficient to wet the pillow on which he was sleeping. We recommended that he be sent to the county hospital, and give Dr. White a chance to observe his symptoms. I thought he had a fracture of the base of the skull.

Dr. W. E. Briggs: When I saw the patient at the Receiving Hospital, there was a drop of clear serum coming from the patient's ear—a drop about every fifteen seconds—and the young man said he thought his brains were running out. I said he made a correct diagnosis. The patient was urged to go to the hospital, but he insisted that he felt well, with the exception of being dizzy and an occasional headache. His symptoms were such that it was difficult to persuade him that he needed absolute rest. The next day he appeared at my office, and continued to do so for some time. Three days ago the fluid ceased to flow, but there was a little pus in the meatus, and the ear was cleansed with an antiseptic solution, which was dropped into his ear, in the hope of avoiding infection of the membrane. He feels well, and the symptoms have subsided. He has a lacerated drum-membrane, but his ear is not so impaired as one would expect. His internal ear is intact, so that the injury, whatever it was, did not involve the internal ear. A fracture must have occurred, and the discharge came through the attic of the middle ear. The case seems to be going on favorably, notwithstanding his moving about. There are no symptoms of a serious character, the serum has ceased to flow, and there is very little purulent secretion in the ear at present.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, June, 1903.

The president, L. A. Kengla, in the chair.

Dr. C. M. Cooper read a paper entitled

SOME CLINICAL CHEST CASES WITH FLUOROSCOPIC REPORTS.

[Published at page 277.]

Dr. H. Moffit: I agree in the main with Dr. Cooper in regard to the advisability of fluoroscopic work. Not as a routine. The usual examination is as yet problematic in regard to burns. In this man it is true the pain was relieved at first, but when I saw him in the hospital with a large burn, it seemed to me the advisability of relieving pain was not to be measured against the disadvantages of producing the burn. It is impossible with the fluoroscope to say that you will not have a burn follow. As far as investigation of the diaphramatic movements, we have in percussion a thing which will show us just that which we gain in the fluoroscope. As far as medical examinations go, percussion is a part of the examination. In mediastinal growth we absolutely need the screen. If we are careful at first in ordinary methods, the fluoroscope merely supplements. We can never tell whether the examination will give us an X-ray burn or not. It may be only after months of work that these things appear. In other cases it is after one or two examinations. In one case it was after simple exposure to the photographic plate at two-foot distance from the light, and with every precaution, that the burn developed after two weeks. So that although these things supplement our work, if we are careful, we can gain just as much information from ordinary methods.

Dr. Voorsanger: In this connection I should like to report a case which came to me some months ago with bronchial asthma and bronchitis, complicated with a peculiar spasmodic cough of such character that it led me to suppose that there was some pressure on the trachea. Without coming to any conclusion, and the treatment being of no avail to stop the cough, I decided to have an X-ray picture taken, thinking there was some mediastinal trouble present. The woman was exposed for twenty minutes to the X-ray, and with the fluoroscope we saw that there was a limitation of movement of the diaphragm on the left side. The X-ray afterward showed a much deeper shadow on the left than on the right. This was explained on the basis of a thickened pleura and adherent lung, resulting from a previous pleurisy. It is a remarkable thing that, during the twenty minutes' exposure, she did not cough, and since then the spasmodic character of the cough has entirely disappeared. Whether it was due to a reflex nervous condition or to other causes, I am not prepared to say, but most probably the former.

Dr. Cooper: Personally I think the X-ray is an adjuvant in the clinical examination of a case. It should replace nothing, but be an additional means of diagnosis. It is true that percussion of the Litton diaphragmatic shadow test are important aids in determining the position and movements of the diaphragm, but when we have exhausted the information obtained by these methods, the fluoroscope often increases our knowledge, more especially in connection with the central tendon. It is the factor in the diagnosis of early mediastinal conditions, and as such occur not only as entities, but also complicating other diseases, the importance of the fluoroscope becomes at once evident. An aluminum screen grounded gives ample protection in fluoroscopic examinations. Dr. Voorsanger's report suggests a psychic influence.

Dr. W. I. Terry read a paper on

THE VALUE OF BLOOD PRESSURE OBSERVATIONS IN SURGERY.

[Published at page 248.]

Dr. A. W. Perry: I have been very much interested in this blood pressure. I have one of these instruments also. There are some precautions to be observed, and one is the variations in diurnal pressure, also variations due to mental work. My blood pressure on rising is about 100, one hour after breakfast 125. Blood pressure is influenced by any excitement, also by taking liquid. It was found by some German investigators that one pint of beer would raise the blood pressure within five minutes, 20 m. m. I find that the temperature of the body being about 98.6, the temperature of the hands should be about 9° lower. The temperature being about 90° in the fingers, to take the blood pressure in order to get accurate count, heat the hands to normal. A person who takes blood pressure during a morning visit will have lower register than during the afternoon hours. I use the Gaertner's tonometer as often as the thermometer. It is of as much value as the thermometer.

Dr. C. M. Cooper: I desire to congratulate Dr. Terry upon having presented this comparatively new subject in a rational way. Blood-pressure problems are by no means so easy to master as many would have us think. In the eastern journals it has been suggested that a nurse armed with the Riva Rocci instrument is able to administer stimulants and other drugs wisely and quickly. But the blood pressure, as registered by this instrument, may be high, and yet stimulants be urgently needed. Take a case of heart disease in which the heart may be in a condition almost of delirium cordis—the carbonic acid in the blood stimulates the vaso-motor center, and hence the blood pressure may be high—yet digitalis is needed, the strengthened heart still further raises the blood pressure. The CO_2 is eliminated and then the blood pressure falls notwithstanding the continued exhibition of the digitalis. Such a sequence of events shows the fallacy of such too enthusiastic claims. In Nothnagel's clinic in Germany, ten American physicians, all of whom had held hospital appointments, were given a series of cases in whom they were asked to estimate the blood pressure. The results obtained were so surprisingly different that it was almost laughable. Such an incident shows the necessity of some means by which we can train our fingers so that they will give us trustworthy information. The instrument shown to-night is so far the best for that purpose. Since regularly using this instrument I have been surprised at the number of patients met with showing recurrent pulses, and to find that by using two fingers of one hand and one finger of the other hand in estimating the systolic blood tension, I can attain better results than by using the fingers of only one hand. It assuredly has a surgical feature, its reading being of assistance to the anesthetist, to the operator, and to some extent to the diagnostician.

Dr. Terry: There is not much to say except that I might have gone into a greater length about instrument conditions, but that was not my object. The Gaertner tonometer is another instrument. It is of no use in cardiac weakness where the anemia of the finger is so marked that we can not note the return of the blood. Again it is of no use in cases of dark-skinned persons, negroes for instance.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, June, 1903.

The President, D. W. Montgomery in the chair.

Dr. Ray Lyman Wilbur presented a report on the epidemic of

TYPHOID FEVER AT PALO ALTO AND STANFORD UNIVERSITY.

[Published at page 254.]

Dr. W. W. Kerr: In the history of this long epidemic, there is a number of interesting points. One is the great number of cases in which there was a subnormal temperature, an apyretic typhoid. I have seen only five cases of apyretic typhoid in which the diagnosis was confirmed by an autopsy. These cases are generally considered to be very rare. My own experience has been very much the same as that borne out in these cases: that whenever you have an apyretic typhoid, the prognosis is very bad. The cases drag along slowly, several of them perforating, but the temperature remaining subnormal all the time. There are one or two other points. I am sorry that the doctor had not the facilities for carrying out the laboratory tests regularly in regard to the Widal reaction; finding out at what time it appeared and how long it existed. We understand under what difficulties he was placed at the time, but more information on this point would have been a great satisfaction to all of us. We find cases that are undoubtedly typhoid in which the reaction only persists for a day or two and others in which it appears late in the disease. Again, I would not like to belittle the pulse in typhoid, because there is a great deal to be learned for it. One thing more I would like to ask. In how many cases in the very beginning of the epidemic, in the first week, did you find the dicrotic pulse? That has often been the first symptom when really no high fever existed. Extreme prostration has often been one of the first things to awaken the suspicion of typhoid. This together with the changes which the doctor has noted in the heart, that is where you find occasional muscular incompetency, shows that we should not pay exclusive attention to the temperature. There is too much tendency to look upon typhoid simply as a fever, and that as the fever disappears the patient is improving. We have heard tonight of quite a number of cases in which there was no fever at all. On the other hand, as the doctor has borne out, in a number of cases you find a feeble heart in the very beginning of the disease, and I understood him to say that in many of them muscular incompetency was established. Changes in the heart are not simply the result of fever, but may be the distinct effect of typhoid poison; these changes are altogether too much inclined to be put down as the results of prolonged high temperature. High temperature is very serious, but in typhoid there is something a great deal more serious than a high temperature, and unfortunately the tendency in treatment is to consider too much this one feature of the disease. The cases mentioned by Dr. Wilbur will bear out that we have something more to guard against. I should like to congratulate Dr. Wilbur and his assistants upon the successful management of such a large number of cases and under such difficult circumstances.

Dr. W. F. Cheney: There is so much to be said and so little time in which to say it, in regard to these cases. I want to express my admiration for Dr. Wilbur in his management of this large number of cases. Everything depends upon the attention paid to detail, which means an immense amount of time spent with cases watching them closely. When one considers Dr. Wilbur's task, one realizes that it is almost beyond comprehension. The facilities one has to work with in the country as compared to those we have in the hospitals here, makes it still more praiseworthy. As regards the management of these cases, the therapeutic management of them and the plan throughout, speaks for itself. But I will say that we are inclined to overdo therapy in typhoid fever. In uncomplicated typhoid no medicinal treatment is needed at all. Uncomplicated typhoid demands nothing but good nursing. Dr. Wilbur spoke of treatment in cases of collapse but said nothing about hemorrhage or of perforation, which surprised me, knowing what he did for them was the very best that could have been done. These are the instances which demand every bit of a man's skill and resource. I have, thanks to Dr. Wilbur and Dr. Black, had my share of these. My experience of these Stanford cases, of which I had sixteen, corresponds very closely with what he told us. The diagnosis in every one of my cases has been made by Widal, but in some the Widal has not been found until the case was very nearly convalescent. I had a Widal test made every two or three days. Dr. Wilbur sent to me cases that were suspected to be typhoid, to be kept under observation for two weeks. They had badly coated tongues, anorexia, no rose spots, no Widal, no temperature, no enlarged spleen. These cases were all sent back with diagnosis, and none of them subsequently developed typhoid or any other symptoms. It is difficult to understand how the diagnosis can be made without Widal in persistently subnormal temperature. In my own experience I have never seen a case where the Widal failed to appear sooner or later. If a case went through weeks and weeks of illness without any Widal, I should be inclined to doubt typhoid fever. One of my cases has been different from any. It was a case that began undoubtedly typhoid and seemed a very simple affair. The temperature was beginning to break, when suddenly the patient had a violent chill followed by temperature of 105°, followed by profuse sweats and subnormal temperature. This went on two or three times within twenty-four hours, chill, fever, and white leucocytes never running above 9,000. There was persistent Widal without any localizing symptoms of sepsis, except in region of liver. If he had an abscess of the liver, he finally got well. Just what the complication was, was never clear in my mind.

Dr. H. C. Moffit: I can not add much to this discussion. It has struck me also that we rely too much on fever for these cases, and sometimes dismiss them without proper diagnosis. A number of cases in which we are satisfied if we make one blood examination even if the fever still continues, we dismiss the idea of typhoid too readily. Repeated examinations, often two or three or five or ten have been made and sometimes it is only until the relapse occurs that the Widal appears. We call these cases something else when many of them are typhoid. It is with this idea that it seems to me the more important to examine the stools. There are methods which should be carried out and only be carried out in some central place. Dr. Ryfkogel has had experience in this line. In any of the doubtful cases we should rely not only on the ordinary things, but be able to use those researches of Koch and Chantemesse which promise fair prospect of cultivating the bacilli from the stools.

Dr. P. K. Brown: I would like to ask whether any cases of collapse were preceded by high temperature. I saw one of these cases of very marked collapse,—the case must have had fifteen or twenty collapses. Prior to the first collapse the temperature rose to 105° after having been normal four or five days; never after that. The rectal temperature fell to 94° during one of the collapses; seemed as though there would be immediate death on a number of occasions. I think Dr. Wilbur's dealing with the collapses is one of the most remarkable parts of the epidemic, So many collapses occurred that the preparations which were made in anticipation probably prevented death in many cases. I would like to ask whether any cases were lost as result of collapse.

Dr. G. H. Evans: It seems to me that aside from clinical interest, there is one thing that is of great importance, and that is the necessity of thorough investigation of the water and milk supply. These epidemics are going to occur in other communities. The milk supply of San Francisco may at any time bring an epidemic of typhoid fever here. I was called in consultation some time ago, to see a patient who was the wife of a dairyman. This woman had typhoid. I found upon investigation that the stools were being thrown out within a few feet of an unprotected well from which their water supply was taken. During the personal investigation I made of the milk supply of this city last winter, I found a most deplorable condition. In one instance, the entire drainage from the barns, outhouses, and privies drained into a ditch which flowed by an unprotected well from which they got their water supply. In another instance, in a large dairy, the entire drainage from the dairy flowed in a ditch through one of the pastures and was accessible to the cows. Imagine the result in the event of one case of typhoid. Such things are certainly going to contaminate that water supply. The investigation should be made by a Medical Milk Commission and not wait for an epidemic before taking action.

Dr. H. A. L. Ryfkogel: I had occasion to examine some of the samples of milk from these dairies. I remember in more than one of the samples that came from Palo Alto there was quite a large number of colon bacilli. I also examined the water supply of one of the dairies and found large numbers of colon bacilli. I do not know whether it was the infected dairy or not. Dr. Evans brought up some points of very great importance. I had occasion some time ago to examine some of the milk he mentions; the bacterial count was very high. There is a better way of studying the infectivity of the milk, it is by examining the water supply of the dairy and the water in which the cans are washed. Cows, of course, do not have typhoid, and there is practically only one way in which the milk can be contaminated. It is not necessary to examine for the typhoid bacillus, because if you do not isolate it, you can not say that it is not there. If you find colon bacilli, then you can say that the water is being contaminated with fecal matter, and if it is not at that time infected with typhoid bacilli it may be later. One can determine definitely that colon bacilli are not present and naturally infer that typhoid is absent as well.

Dr. F. B. Carpenter: I think we would be interested if Dr. Wilbur would give his opinion in regard to why he considered it unwise to operate on these cases of perforation. The percentage of recoveries without operation seems to have been about fifty. There were four cases of perforation with two recoveries. There is not a great deal of work being done in the way of successfully operating upon the typhoid cases. The percentage of recoveries is increasing very rapidly. The percentage of recoveries has gone from five up to about seventeen with operation. This matter was brought up in the County Medical Society, and at that time I knew of no case that had been operated upon in San Francisco, but the discussion of the subject developed quite a number of cases not previously reported.

Dr. Wilbur: In the first place, in regard to Dr. Kerr, the condition of the pulse was a very characteristic sign as to the onset of the trouble. In all cases, with very few exceptions, we found a dicrotic condition. I did not bring that out because later I began to distrust the pulse, and found that I could only depend upon the first sound. The importance of the temperature has been exaggerated. My worst case had little temperature. I lost no cases in collapse, although I was telephoned too that the patient was dead in one collapse. On getting there I found that the routine which I had laid out for such an emergency had been carried out and invariably the patient was improving. These collapses frequently followed a high temperature, particularly collapses which come early in the disease, but subsequently occurred without high temperature. It seemed as though the body had done all that it could and then suddenly had given out and the whole system had gone into a state of collapse. I ascribed that to the infection more than to the temperature. In this matter of subnormal temperature, I had opportunity to observe it in families. My diagnosis was made in all without the Widal reaction. I found a history of rose spots, history of colicy pains in the abdomen and gas in the bowels. In the matter of treatment of hemorrhage, perforation, pneumonia, and collapse, I intend to give that in a later paper. I believe that operation for perforation at the height of typhoid infection is dangerous to the whole system, particularly to the cardiac muscle. My objection is based purely from the standpoint of the patient's recovery from the anesthetic, loss of blood, and exposure of the peritoneum. I had opportunity to autopsy two cases of perforation made by localized peritonitis with a good deal of fibrinous exudate, and I think that the patient would have recovered if the second perforation had not occurred. The ulceration was as large as a dollar. In the center there was a perforation as large as a lead pencil back up against the abdominal wall. It seems to me that to cut out that large part of the bowel one would have to cut out a piece as large as a saucer. I would hesitate very much in allowing a stitch to be placed in that kind of bowel. The opportunity for diagnosis in that case was particularly very good. The perforation was very near the appendix, and a spasm of the muscle on that side localized. From observation of the cases that got well, I am convinced that during the course of the disease, with the patient fighting this infection, an operation is not required, and if so, only as a last resort. From the cases which I saw, I wrote out treatment for hemorrhage, treatment for perforation, what to look for, and collapse. First collapse give nitroglycerin, because such a collapse might mean hemorrhage. Each case was provided with five or six hypodermic syringes; 100 minims of nitroglycerin, and 1-20 strychnin. They were also provided with another syringe for camphorated oil, ether in oil, and saline solution was kept ready. On any sign of collapse brandy and hot water were given. If they did occur, 100 minims of brandy, strychnin, camphorated oil, ether in oil given and then bath. Then if there was no result, saline given under the skin in several ounces. All of these cases got well. None died in collapse. I found that after ether in oil it took about forty-five minutes to bring up the pulse, so that it could be very readily detected. I found out a most interesting thing, that in regard to pneumonia, turpentine inhalations did a great deal of good. It seemed to revive a patient in a state of marked cyanosis, when oxygen had no particular effect; seemed to have an irritating, stimulating effect. Caffein hypordermically acted better than any other stimulants.

Dr. H. Johnson reported a

CASE OF CIRRHOSIS OF LIVER WITH ASCITES FOR WHICH MORRISON'S MODIFICATION OF TALMA'S OPERATION WAS PERFORMED.

Married woman 48 years of age, alcoholic history indefinite, symptoms of present illness began four years ago. Swelling of the feet followed shortly by swelling of abdomen. Nine months later she was aspirated and fourteen quarts of serous fluid was withdrawn. From that time up to the present she has been aspirated at intervals of three to seven months and the same quantity drawn off each time. Five months before operation she had a very severe hemorrhage from the esophagus or stomach. Examination prior to operation. Abdomen greatly distended and full of fluid, no edema of lower extremities. Apex beat of heart in fourth interspace, murmur of mitral regurgitation. Examination of blood and urine negative. The diagnosis of cirrhosis was confirmed at operation. The liver was small, hard, and slightly nodular and the peritoneum thickened. The regular Morrison operation was performed by Dr. MacMongale with drainage through a lower incision. The patient was discharged on the forty-fifth day. Her abdomen again became distended with fluid, the swelling increasing up to a month ago when it gradually began to subside, so that at the present time there is a marked decrease in the size of the abdomen accompanied by an improvement in her general condition. She can now lie down flat in bed, sleep with comfort and do light housework, which were impossible for her to do before operation, and whereas in the three months previous to the operation she was aspirated four times, in the three months following closure of the wound aspiration has not proved necessary. (Case to be reported in full after further observation.)

Dr. Dudley Tait: I would like to ask the reason for drainage in this case. Why did the operator find it necessary to deviate from the usual proceedure of epiplopexy? If drainage for ascites is no longer considered proper, in view of the fact that the peritoneal cavity can not be drained especially with gauze or a tube, and also on account of the probability of secondary infection from the site of drainage. In fact, drainage of any serous cavity, for an aseptic condition, is almost unheard of nowadays. In listening to Dr. Johnson's report, and also in reading the constantly increasing publications on Talma's operation, I am prompted to make a comparison between tuberculosis of the peritoneum and cirrhosis of the liver. In the first class of cases surgeons have made a most careful study of the intra-abdominal lesions noted upon exploration, and while the majority of surgeons are to-day convinced that such cases should be handed back to the medical man with apologies, the credit of having contributed a vast amount of knowledge on this morbid condition can not be denied the surgeons. Not so, at least so far, with the subject of cirrhosis of the liver. I do not know of a single case in which a specimen of the liver or spleen was removed for microscopic examination; no one has made a complete report upon the ascitic fluid in a case submitted to Talma's operation; the hepatic functions were never properly tested in any reported case. The vast majority of the reported cases are incomplete, both from the medical and surgical standpoint. In regard to the disappearance of the ascitic fluid after Talma's operation several facts should be remembered. 1st, the incontestable frequency of spontaneous cure of the hypertrophic form of alcoholic cirrhosis. The reports generally mention the finding of an enlarged liver. 2d. The existence of a tubercular cirrhosis of the liver, and the frequent coexistence of this condition and alcoholic cirrhosis, the first lesion often predominating. This type has received considerable attention from Hanot's pupils, Gilbert, Fournier, and others. Its benign character and curability have been well demonstrated. 3d. The proper examination of the ascitic fluid from the bacteriologic standpoint, especially by the new method of inoscopy. Jausset found tubercle bacilli in a large proportion of cases diagnosed clinically as atrophic cirrhosis (three positive results in five cases, five positive findings in a second series of eight cases). In conclusion, I would suggest that the surgeon seek the cooperation of the trained medical man prior to surreptitiously invading the medical domain.

Dr. B. MacMonagle: As I did the operation in this case, I may be able to answer some of the questions that have been raised. I do not undertake to explain how such operations produce a good result. As this patient had been ill for some time and had undergone an operation for so-called "ovarian cyst," and had been repeatedly tapped by distinguished physicians and surgeons with doubtful or very little advantage. I thought best to open the abdomen and give her what adventage there might be in a modified Talma's operation. Dr. Tait's theory has yet to be established. I do not see one fact in this case that would tend to its support. The drainage tube was inserted to allow serum to pass through it as much as possible. From my observations of the case, I am inclined to believe the ascites arose from the diseased condition of the liver and insufficiency of the heart. The amount of benefit in this case so far is slight, but more than has resulted from any previous treatment.

Dr. W. W. Kerr: I never saw a true cirrhosis where there were the toxemic symptoms, such as nasal and gastric hemorrhages, where the patient ever lasted more than a very few months. In cardiac cases with enlarged liver such hemorrhages are common and are not of grave prognostic value. Was the operator in this case able to examine the liver and find the cirrhosis? were all the symptoms due to cirrhosis, or was there an associated heart lesion? In regard to the relief which sometimes follows this operation, I think the explanation of it is somewhat doubtful. I question very much if it is really due to the establishment of collateral circulation. I have seen quite a number of cases where collateral circulation was established as full as the vessels would allow, all the superficial veins being dilated to a very large size and yet the ascites persisted. One such patient was relieved by Talma's operation nearly four years ago, and now the superficial abdominal veins are smaller than they were before the operation. Furthermore it has bothered me frequently to find an explanation as to how you would not get an increase in the toxemic symptoms if you establish this collateral circulation, because we certainly know that we should not look upon cirrhosis simply as a bugbear in the way of producing ascites, which is comparatively a very trivial thing. It is the toxemia that is important. That the toxemia results from passage into the general circulation of substances, which have not undergone perfect portal digestion, has been demonstrated experimentally by establishing an anastomosis between the portal and general circulations, and therefore any attempt which is made to account for the relief that occasionally follows Talma's operation by attributing it to the establishment of collateral circulation is confronted by a physiological difficulty which is hard to surmount. About ten years ago Hale White reported a series of experiments and pathological observation relative to ascites in cirrhosis, which led him to the conclusion that the effusion is due to an associated chronic peritonitis, and it has been suggested that the relief following Talma's treatment is due to an obliteration of the true peritoneal cavity. Personally I am inclined to the opinion that the destruction of a large secreting surface by the production of close adhesions between the inflamed peritoneal surface and the abdominal viscera is responsible for the arrest of the ascites, and the greatest benefit to the patient will be found in cases of syphilitic cirrhosis where there is little destruction of hepatic cellular tissue but where the blood vessels are liable to be obstructed. Such an obliteration of the secreting surface would explain these cases, where ascites disappears but the patient continues to suffer from marasmus. In my ward at present there is a man who was tapped nine times, and the ascites has been absent for more than six months although he has the large liver, distended abdominal veins and facial expression of a patient suffering from cirrhosis.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE, AND THROAT SURGEONS.

Regular Meeting, March, 1903.

The president, Dr. Louis C. Deane, in the chair.

Dr. Payne exhibited a remarkable case of vitreous opacities.

CATARACTS.

Dr. G. Powers: I had occasion to remove a cataract from the eye of a gentleman 79 or 80 years of age, very healthy and active, exceedingly tractable. Did not wince or make any trouble at all during the operation. When making the incision, the iris seemed to fall in front of the knife so far that I thought it must be wounded. There was only gentle pressure required to extrude the lens. I held the scoop ready to take it, and when the lens was removed, the entire iris came with it. The only way to account for it is, in moving away the lens, traction was produced upon the iris, and brought it away. Nothing in the operation happened to loosen the iris. I saw something of the same kind happen in the experience of another man in an attempt to make an iridectomy. There was no vitreous lost, a few flakes of blood only. Did not open the eye for five days, and at the end of that time the man counted fingers at quite a distance and could distinguish faces very easily.

Dr. R. W. Payne: This is an extraordinarily interesting specimen. The iris shows that it was atrophic and was undergoing degeneration. There is very little pigment, and the wounded iris is not any too firmly fixed at the limbus border, so one can understand how this accident might occur with such an atrophic and degenerative condition.

SATURDAY NIGHT CLUB.

Regular Meeting, June, 1903.

Dr. Emma Merrit read a paper entitled,

ACUTE SUPPURATIVE OSTEOMYELITIS

[Published at page 293.]

Dr. Waterman: Do these cases ever seem to come as an epidemic? Some times they do. Up to two years ago we had only occasional cases. The greatest proportion I have treated in the last two years. There has also been so many mastoids in the last two years. There must be some cause for it. It is said to be one of the consequences of grip.

Dr. M. E. Kibbe: I suppose this disease can run a chronic condition for three or four years, especially in older people? Yes, I think that in the girl with the ulna that must have been the case, where the whole interior of the medullary canal was opened. That would have gone on years and years before it would have come out. Probably it would have died of septic infection.

Dr. R. L. Ash: I should like to ask something about the etiology in these cases. Sore throat was mentioned. I do not think sore throat has anything to do with it. In the Children's Hospital many patients have sore throat. The skin gets infected, and thus the microbes pass into the circulation. This is what is called primary osteomyelitis. The children having injured themselves, the injury setting up an inflammation of the bone gives rise to what is known as secondary osteomyelitis. In some cases we have both contributing causes. The cause is infection due to some bacteria. In one case you spoke about the staphylococcus was the cause; again the pus was sterile. In most cases we find staphylococci in the pus. In the worst cases we find streptococci. I should like to ask something about the etiology in these cases.

Dr. M. E. Kibbe read a paper on

ASCITES DUE TO SYPHILITIC CIRRHOSIS OF THE LIVER TREATED BY EPIPLOPEXY

[Published at page 303.]

Dr. Waterman presented

A CASE OF LISPING, NASALIZING, AND THICKNESS OF SPEECH, IN A YOUNG WOMAN TWENTY-TWO YEARS OF AGE.

A detailed history of the case was given, with mention of operations for adenoids and nasal obstruction. The patient had lisped from childhood, and had the thickness of speech that frequently attends that defect, also nasalizing, resulting from adenoids, etc. The lisping, that common form, the substitution of "th" for "s" due to contact of the tongue with the teeth. The thickness of speech, caused by tendency of the tongue to cling to the bed of the lower jaw and act against the teeth, in articulating the consonants t, d, l, n, and r, (which are correctly formed by the tip of the tongue acting against the upper gum). There was some conversation with the patient, who answered questions with only occasional suggestions of the defect. She gave, also, some of the exercises used in overcoming the downward and protrusive tendency of the tongue, as advised by Melville Bell. In overcoming nasalizing. exercises arranged by Dr. Emmerson of Boston, for "nares resonance and establishing right habits in the use of the voice," have been found very helpful.